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Service Manual

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Centurion® Vision System Service Manual
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IMPORTANT NOTICE

Equipment improvement is an on-going process and, as such, changes may be made to the equipment after this manual is printed. Accordingly, Alcon makes no warranties, expressed or implied, that the information contained in this service manual is complete or accurate. It is understood that if this manual is used to perform service on the equipment by other than trained personnel, the user assumes all risks in the use of this manual.

In order to protect the goodwill associated with Alcon, and its products, maintain Alcon's standards, and provide its customers with a high quality of service, Alcon strongly recommends that all servicing of this equipment be performed by Alcon-trained service personnel. Such personnel receive in-depth, extensive training in the servicing of the equipment, including training in the diagnosis and correction of problems that may arise with the equipment. Any servicing of this equipment by persons other than Alcon-trained service personnel may expose those persons, subsequent users of this equipment, patients, and other third parties to significant risk of serious injury and/or death. Alcon will not assume responsibility for the effect of the repairs, damages, or personal injuries arising from repairs by any third party.

CAUTION

Federal law restricts this device to sale by or on the order of a physician.

WARNINGS AND CAUTIONS

Pay close attention to warnings and cautions in this manual. Warnings are written to protect individuals from bodily injury. Cautions are written to protect the instrument from damage.

UNIVERSAL PRECAUTIONS

Universal precautions shall be observed by all people who come in contact with the instrument and/or accessories to help prevent their exposure to blood-borne pathogens and/or other potentially infectious materials. In any circumstance, wherein the exact status of blood or body fluids/tissues encountered are unknown, it shall be uniformly considered potentially infectious and handled accordingly. This is in accordance with OSHA guidelines.

Comments or corrections concerning this manual should be addressed to:

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SECTION ONE - GENERAL INFORMATION

NOTE: The information in Section One is an abbreviated version of the information contained in the Centurion® Operator's Manual. For a complete description of the system from an operator's perspective, including operator warnings and cautions, refer to the operator's manual that was packaged with the system.

INTRODUCTION

The Centurion® Vision System is a multi microprocessor-controlled ophthalmic surgical instrument with associated memory and input/output (I/O) circuitry. The system communicates to the user via its Front Panel display, with voice confirmations, and with tones.

An automatic self-test is initiated each time system power is turned on. This test checks a variety of functions including the following:

- Host CPU Assembly (including Display&Touchscreen)
- Footswitch Interface
- Multifunction Assembly
- Fluidics Assembly
- Active Fluidics™ Assembly
- Phaco Assembly
- IV Pole Assembly
- Pneumatics Assembly

When the system successfully completes the self-test, it automatically goes into the Setup mode. If the system fails the self-test, an Event message is displayed.

DESCRIPTION OF CONSOLE

Fluidics Module

The fluidics module is located in the center of the front panel. The module allows fast and easy insertion of the Fluidic Management System (FMS; i.e., cassette), and because the module contains all the connections required, surgery can be started with minimal delay.

Front Display Panel and Touch Screen

The front display panel tilts and rotates, allowing easy maneuverability during setup and surgery. For storage and transport, the front panel folds down. The front display is the user's main source of system control, allowing fingertip command of system functions.

Adjustable Instrument Tray

The system provides an adjustable instrument tray within the sterile field. The tray is capable of accommodating a variety of positions in the operating room environment—right, left, front, and rear of the surgeon—and the tray is height adjustable. There are curved metal rods on the tray that allow for creation of sterile pouches when covered with a sterile tray support cover, and also provide cradles for the IR remote control. Two rubber clips are built into the tray surface to neatly secure the handpiece cables and tubing up and off unsterilized surfaces.

CAUTION

The maximum weight allowed on the instrument tray is 9.1 kg (20 lb.)



Figure 1-1 The *Centurion®* Vision System Console

Front Panel Connectors (see Figure 1-2)

The front panel connectors are located on both sides of the fluidics module. The front panel connectors provide three self-locking phaco handpiece connectors, two connectors for the INTREPID® AutoSert® IOL Injector, one connector for a bipolar coagulation handpiece, connectors for the INTREPID® Capsulotomy Device, and luer lock pneumatic connectors for the *Centurion®* UltraVit® Probe. The left row of connectors also includes a utility light for the instrument tray. Symbols near the connectors facilitate handpiece identification.

The Centurion® OZil® handpiece is recognized in the top two phaco handpiece connectors; only the INFINITI® OZil® handpiece is recognized in the bottom. Only one phaco handpiece can be connected at one time in either connector, unless the UltraChop feature is enabled in which case the system will accept two phaco handpieces.

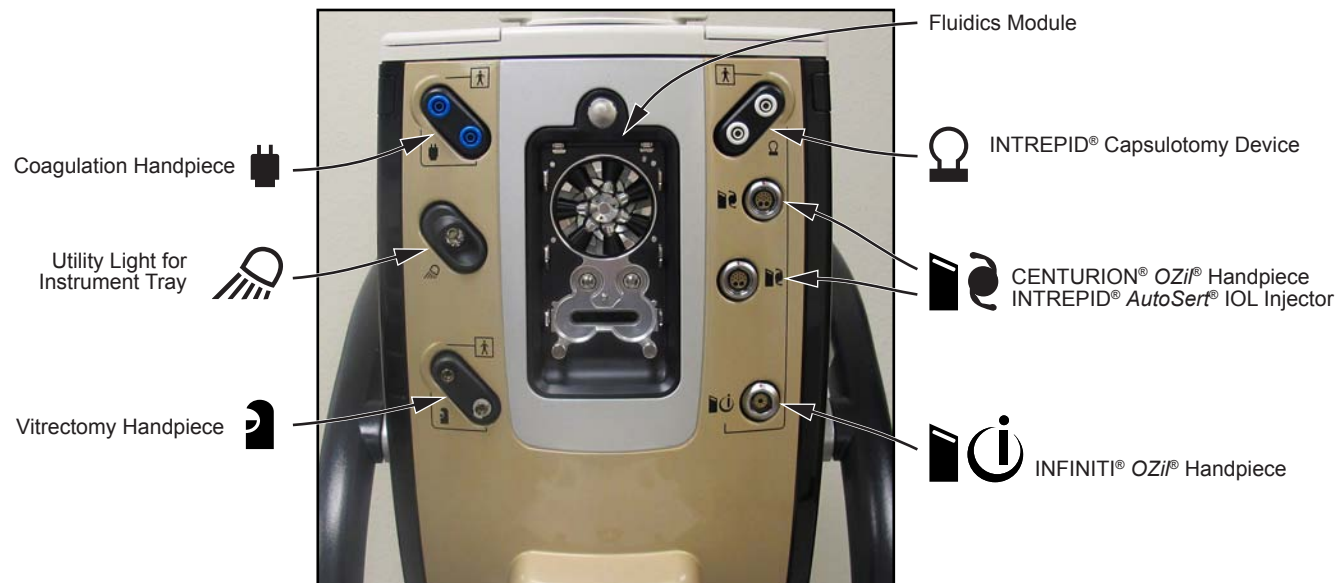


Figure 1-2 Front Panel Connectors

Standby Power Switch

This pushbutton switch is used to turn secondary power ON and OFF. If system freezes and is unresponsive to operator commands, press Standby switch for five seconds to shut down system, then re-boot.

Accessory Drawer

One drawer allows storage of miscellaneous accessories.

Audio Speakers

Three audio speakers are located on the front and each side of the console. These speakers produce voice confirmations, in conjunction with multiple tones, to allow the Centurion® Vision System to communicate with the user. Audible tones are generated to indicate a change in the operating mode and to alert the operator of certain conditions such as an occluded line. Additionally, a varied pitch tone is generated to audibly indicate vacuum levels; the pitch increases as the vacuum level increases. Speaker volumes are adjustable via the Custom menus.



Figure 1-3 Rear and Side Panels

Locking Caster Wheels

Four large caster wheels support the Centurion® Vision System. The wheels rotate 360° for ease of system mobility, and all four wheels have a locking lever to secure the system in place. The wheels should always be locked when the unit is in use, and unlocked when being moved.

Handle Bar

A handle bar wraps around the sides and back of the console, and should always be used to move it.

CAUTION

The system must be moved carefully, otherwise it could tip over and become damaged. Do not push or pull the unit by the display, the instrument tray, or the IV pole. The handle bar is provided for moving the instrument. The unit should be pulled and not pushed, especially over elevator and door thresholds.

Equipotential Ground Connector

The equipotential ground connector may be used to provide a direct connection between the *Centurion*[®] system and the potential equalization bus-bar of the electrical installation. This connector complies to the requirements of IEC/EN 60601-1.

AC Power Cord Hanger

Used to store the power supply cord when system is out of use. Located in the middle of the rear panel.

Primary AC Power Switch

The power module contains an AC power switch, AC power connector, and a fuse holder. The power module is located at the bottom of the rear panel. A standby power switch is located at the top of the right side panel.

- AC Power Connector - Power cord from AC power outlet connects here. A hospital grade power cord must be used.
- Primary AC Power Switch - Connects AC power to power supply.
- Fuse Door - Open the fuse door to gain access to the fuse holder. Refer to label on back of system to identify fuse size and type.

Footswitch Hanger / Charging Station

When out of use, the wireless footswitch hangs on the back of the console. If used wirelessly, its internal lithium ion battery is charged inductively through the rear panel. If wired to the system, and system power is turned on, the footswitch battery is charged through the cable.

Input/Output (I/O) Connector Panel

This panel contains inputs and outputs for Audio input, USB communications, VideOverlay output (RS232), and Ethernet internet communications (RS422). An antenna for wireless communications is also located on this panel.

The USB port is provided for Service functions and for backing up and restoring Dr. memory. Plugging any other USB device into the port is not recommended.

Rotating Work Surface

A versatile rotating work surface is provided on the top of the system. When stowed, this work surface covers the Active Fluidics[™] bag bay and is locked in place. When open it allows the user to lower a bag of BSS[®] irrigating fluid into the bag bay.

To rotate the work surface and reveal the bag bay, press and hold the locking ring while pressing sideways on the work surface (see top image in Figure 1-4). The right image shows the work surface in the open position, allowing access to the bag bay. Once open, the surface can be rotated until the mechanical lockout feature prevents further rotation. When Active Fluidics[™] technology is used, this lockout feature prevents inadvertent contact of the work surface against the bag of BSS[®] irrigating fluid and its tubing. To return the work surface back to its stowed position, press and hold the locking ring and press sideways on the work surface.

CAUTIONS

- **The maximum weight allowed on the rotating surface is 4.55 kg (10 lb.)**
- **Work surface must not come in contact with bag of irrigating fluid.**



Figure 1-4 Rotating Work Surface

FLUIDICS ADMINISTRATION

The *Centurion®* Vision System supports two types of fluidics administration to deliver and control fluidics fluid pressure: Gravity Fluidics is used for fluid administration using the power IV pole, and Active Fluidics™ technology is an automated system that administers fluid from a bag of BSS® irrigating fluid within its bag bay.

Power IV Pole and Hanger for Gravity Fluidics

For gravity fluidics a container of BSS® irrigating fluid is hung from a hanger on top of the IV pole. Raising and lowering the pole increases and decreases the irrigation pressure delivered to the tip of the handpiece. The hanger can be installed in 45° increments by releasing the chrome nut at the bottom of the IV pole, lifting the pole up, and setting it back down at the desired angle.

Bag Bay for Active Fluidics™ Technology

For Active Fluidics™ technology a bag of BSS® irrigating fluid is compressed between two plates within the Active Fluidics™ bag bay, located under the rotating work surface on the top of the console. The pressure created by compressing the bag of irrigating fluid is monitored to provide an accurate pressure source, allowing control of intraocular pressure (IOP).

This precise pressure control creates the opportunity to tailor IOP performance based on surgical preference. There are two functions related to Active Fluidics™ technology which allow the surgeon to tailor IOP performance: Irrigation Factor and IOP Ramp.

WARNING!

Use of BSS® irrigating fluid bags other than those approved by Alcon for use in the Active Fluidics™ system can result in patient injury or system damage.

DESCRIPTION OF FOOTSWITCH

The *Centurion®* footswitch, shown in Figure 1-5, can be used wirelessly or can be wired to the console. When the footswitch is operated wirelessly, it retains the same functionality as it does when it is wired to the system. The wireless footswitch is immune to interference from other wireless devices.

NOTE: The system may also use the *Centurion®* Wired footswitch or the *Constellation®* footswitch (requires a special adapter cable).

The footswitch icon button on the display screen is a graphical representation of the footswitch connected. When connected, the current footpedal position (0, 1, 2, or 3) is displayed in the center of the icon, and a triangular arrow appears next to the icon each time a switch is activated. If a footswitch is not connected, a wireframe footswitch is shown in the status bar and no footpedal position is displayed.

Several functions within the system's operating modes are controlled by the surgeon using the footswitch. The footpedal enables the surgeon to control irrigation flow, aspiration rate, capsulotomy activation, phaco handpiece power, vitrectomy cutting, coagulation power, and IOL injection. The switches are used to turn functions on/off, to adjust function settings, and to progress through surgical steps.

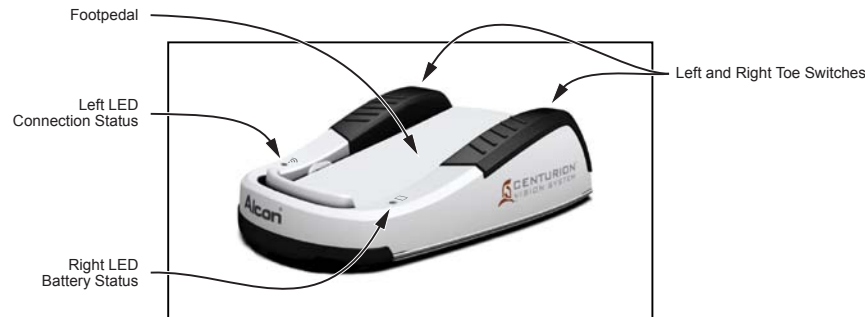


Figure 1-5 The *Centurion®* Footswitch

CAUTION

Never pick up or move the footswitch by the cable. Dropping or kicking the footswitch can cause irreparable damage.

Footswitch Status LED's

Two LED's, one on the left and one on the right of the footpedal heel, illuminate to indicate footswitch status. Table 4-1 shows the LED display patterns with respect to the footswitch's operation state.

Table 1-1 Footswitch LED Indications

Color and Behavior	Description
Left LED Indicating Connection Status with Centurion® System	
Solid Blue	Connected (wired or wireless)
Off	When footswitch is in wireless mode and not engaged*, or in wireless mode and does not hear beacons from console, or in shipping state
Right LED Indicating Battery Status	
Solid Green	Battery level > 40 % of usable range
Solid Yellow	Battery level ≤ 40 % of usable range
Blinking Green	Battery level > 40 % while charging
Blinking Yellow	Battery level ≤ 40 % while charging
Off	When footswitch is in wireless mode and not engaged*, or in shipping state
* LEDs remain on/blinking for a few seconds after disengagement of the footswitch; i.e., not pressing on the footpedal or any of the footswitch buttons.	

Charging Footswitch Battery

The footswitch battery can be charged using two different methods:

- The footswitch can be charged wirelessly by cradling it on system footswitch hanger on the rear panel of the console.
- The footswitch can be charged by cabling it to the connector at the bottom of the *Centurion®* front panel. With system power turned on, the battery will be charged through the cable.

Pairing Footswitch with Centurion® System

To change the wireless channel for the footswitch, the footswitch must first be cradled onto the back of the system. This "pairs" the footswitch with the system and allows the wireless channel to be changed in the Custom / System Settings / Wireless tab. Note that since the wireless footswitch and the Surgical Guidance System (SGS) device share the same network, changing the wireless channel for the footswitch will require a re-pairing of the SGS device.

Footswitch Floor Security

The footswitch has four spring-loaded ball plungers at each corner of the bottom plate (see Figure 1-6). These ball plungers are designed to allow easy sliding of the footswitch on a smooth floor, and yet still offer secure floor gription when the weight of the surgeon's foot is resting upon it.

The weight of the surgeon's foot on the footswitch causes the spring-loaded ball plungers to collapse, allowing the footswitch to rest on its rubber sole, thus preventing it from sliding on the floor. The tension of the spring-loaded ball plungers is adjustable to the surgeon's preference using a wide, flat-tip screwdriver. Simply place the screwdriver directly on top of the ball and press down until the screwdriver tip settles into the screw slot, then turn clockwise or counterclockwise to increase or decrease the spring tension.

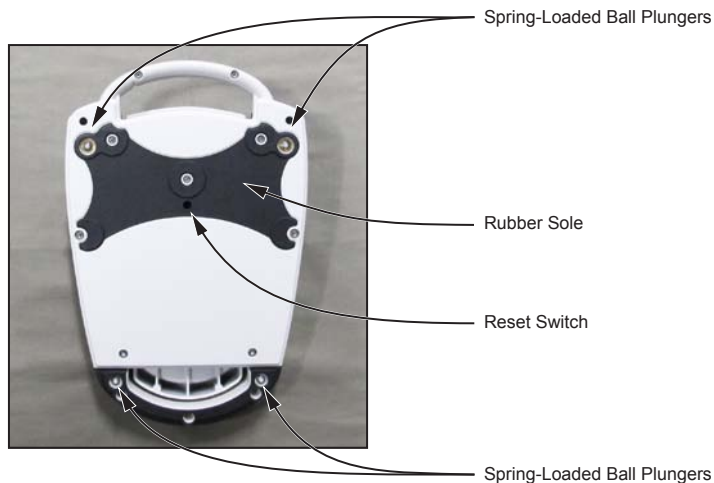


Figure 1-6 Bottom of Centurion® System Footswitch

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Footswitch Power Reset Switch

A power reset switch is located in the bottom of the footswitch. In the case that a reset is required, simply press a cotton swab into the small hole in the bottom to depress the switch and turn power back on (see Figure 1-6). Re-pairing of the footswitch will restore the previously-programmed footswitch settings.

Cabled Footswitch Connectors

The Centurion® footswitch can be wired to the system, while the Centurion® Wired and Constellation® footswitches must be wired. Figure 1-7 shows the footswitch connector panel located at the bottom-front of the system.

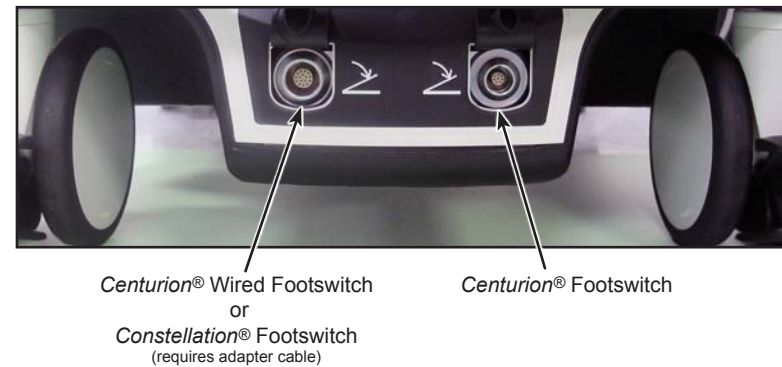


Figure 1-7 Footswitch Connector Panel

DESCRIPTION OF IR REMOTE CONTROL

The infrared (IR) remote control shown in Figure 1-8 allows the user to quickly navigate procedure steps and make simple parameter value adjustments.

CAUTION

Do not sterilize the remote control as it will damage the unit.



Figure 1-8 Infrared (IR) Remote Control

Remote Control Batteries

When batteries in the remote control are low, a flashing battery low icon will be displayed next to the remote control display at the top of the screen.

A battery holder inside the remote holds two (2) AA batteries. To replace batteries, remove the battery cover from the bottom of the remote. Replace old batteries (see Figure 1-9) and replace cover. Dispose of batteries following local governing ordinances and recycling plans.

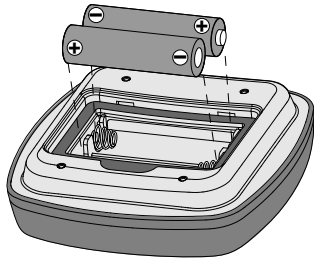


Figure 1-9 Remote Control Battery Replacement

Select Remote Control Channel

The remote control can be configured to operate on one-of-six channels. This feature allows six remote controls to independently control six *Centurion*[®] Vision Systems operating in the same room or area. Remote controls are factory preset to channel A. For proper remote operation, the console must be set to the same channel as the remote control.

To select a remote channel, press the Custom key and select System Settings/General tab. Select the Change Remote Channel button and follow the on-screen instructions (see Figure 1-10). No additional steps are needed once the remote channel is set, and only one remote channel is stored per unit.

PRECAUTION: If necessary to distinguish between remote controls, identify the remote controls and the units with unique labels.

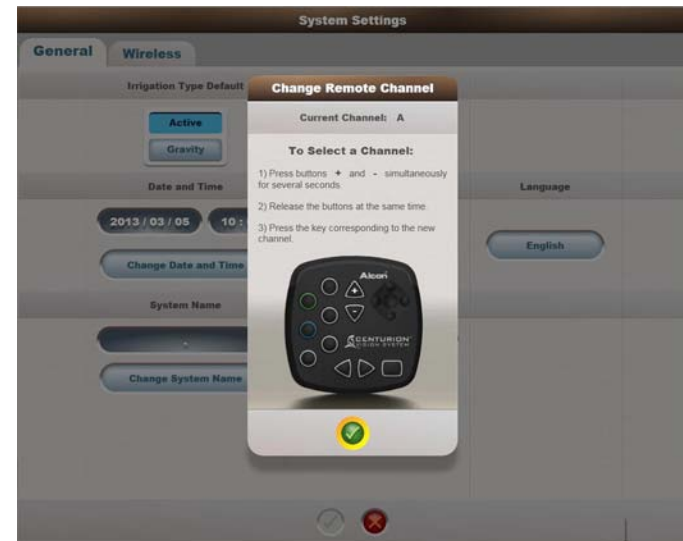


Figure 1-10 Change Remote Channel Dialog

Icons associated with the system are shown and defined in Figure 1-11.

	Type BF equipment, providing both the attributes of basic insulation and "floated" isolation.		Eject FMS
	Follow Instructions for Use (white figure on blue background)		Utility light over instrument tray
	WARNING: The console might overbalance when it is pushed and its wheels are immobilized (blocked) (black symbol behind lined out red circle)		Connector for CENTURION® OZI® handpiece
	WARNING: Dangerous Voltage (black symbols on yellow background)		Connector for INFINITI® OZI® handpiece
	GENERAL WARNING (black symbols on yellow background)		Connector for INTREPID® AutoSert® IOL Injector
	Equipotential ground connection		Connector for Vitrectomy probe tubing
	AC Voltage		Connector for INTREPID® Capsulotomy Device
	Power stand-by state for a part of equipment		Connector for Coagulation handpiece
	ON (POWER)		Connector for Cabled Footswitch
	OFF (POWER)		Magnetic Resonance Unsafe
	Fuse Size, Type, and Rating		Non-ionizing electromagnetic radiation
T10.0AH/250V			Date of Manufacture
	Use appropriate take-back system (see Environmental Considerations in this manual)		Manufacturer
	Pb notation, if present, indicates lead content greater than 0.004%.		OSHA recognized NRTL, TUV SUD America mark, providing electrical safety certification to North American requirements for Medical Devices.
	Catalog Number		
	Serial Number		

Figure 1-11 Icon Definitions

Table 1-2 SPECIFICATIONS

<u>Product Requirements</u>	<u>Performance Requirements</u>
<p>Console Dimensions: Height: No greater than 165 cm (65 in) Width: No greater than 58.5 cm (23 in) Depth: No greater than 76 cm (30 in)</p> <p>Console Weight: Unpackaged: No greater than 107 kg (235 lb) Packaged: No greater than 150 kg (330 lb)</p> <p>Environmental Limitations – Operating: Altitude: 3,000 m (9,842 ft) Temperature: 10 °C to 35 °C (50 °F to 95 °F) Relative Humidity: 10 % to 95 % without condensation</p> <p>Environmental Limitations – Non-Operating: Altitude: 5600 m (18,300 ft) Temperature: -40 °C to 70 °C (-40 °F to 158 °F) Relative Humidity: 10 % to 95 % without condensation</p> <p>Shock, Bump & Drop: The system conforms to EN ISO 15004-1 requirements for vibration, bump, and shock.</p> <p>Caster Wheels: Unpackaged instrument must withstand two impacts under conditions: - 7.6 cm (3 in) free fall onto all four casters - 7.6 cm (3 in) tilt drop onto each caster (raise one caster 7.6 cm (3 in) above the floor, then allow device to fall back to normal position)</p> <p>Console Stability: Meet IEC 60601-1 placed on incline of 10 ° from horizontal</p> <p>Maximum Weights: Rotating Work Surface: 4.55 kg (10 lb) Instrument Tray Arm: 9.1 kg (20 lb)</p> <p>Degree of Protection by Enclosure: Meets IP10 (console), IPX1 (IR remote control), IPX6 (footswitch) as specified in IEC 60529 and IEC 60601-2-2, clause 201.11.6.5 (footswitch)</p> <p>IR Remote Control: Method: Infrared Channels: 6 Batteries: (2x) AA</p> <p>Footswitch: Dimension: 7.6 cm (3 in) tall x 22.9 cm (9 in) wide x 30.5 cm (12 in) deep Weight: No greater than 5.4 kg (12 lb) Environmental: Footswitch construction is water tight in compliance with IEC 60601-1 and IEC 60601-2-2 Electrical: Footswitch is configured for wireless transfer Channels: 16</p> <p>AC Electrical Requirements: Input Voltage: 100 - 240 VAC 50 / 60 Hz Maximum Input Current: 10 A</p> <p>Protection against Electrical Shock: Class I</p> <p>Classification of All Applied Parts: Type BF</p> <p>Data Card: USB data stick: 8 Gb min.</p>	<p>Phacoemulsification: (CENTURION® OZI® handpiece and INFINITI® OZI® handpiece) Submodes: Continuous, Burst, Pulse Longitudinal Tip Stroke @ 100 %: .0084 ± .0018 cm (.0033 ± .007 in) Resonant Frequency: 30 kHz to 60 kHz Torsional Tip Stroke @ 100 %: .0069 ± .0023 cm (.0027 ± .0009 in) Resonant Frequency: 30 kHz to 60 kHz Pulse Rate Range: 1 - 250 pps On Time: 0 - 100 % Burst On Time: 2 - 500 ms Burst Off Time: 2500 - 0 ms</p> <p>Anterior Vitrectomy: Submodes: Anterior Vit, Epi Removal, I/A Cut, Peripheral Irid, Visco-Asp CENTURION® UltraVit® Probe: 1 to 4,000 cpm</p> <p>Diathermy (Coagulation): 10 W max, 75 Ω load 76 Vpp @ 1.5 MHz ± 5 %, 75 Ω load Waveshape: Sinusoidal</p> <p>Vacuum @ Sea Level: Phacoemulsification: 0 - 650 mmHg (0 - 867 hPa) max Vitrectomy: 0 - 650 mmHg (0 - 867 hPa) max Irrigation / Aspiration: 0 - 700 mmHg (0 - 933 hPa) max</p> <p>Power IV Pole: Height Range: 20 to 110 cm</p> <p>IOP Controlled Infusion: Range: 26 - 110 mmHg (35 - 150 cmH₂O) (35 - 147 hPa) Accuracy: ± 20 % of setpoint or 15 mmHg (20 hPa) Aspiration Flow Rate: 0 - 60 cc / min (0 - 60 mL / min) Usable Fluid Volume: ≥ 350 cc (350 mL)</p> <p>Voice Confirmation: Range: 0 to 65 dB</p> <p>Tone Volumes @ 1 meter Errors/Faults/Invalid Key: 40 to 65 dB, short tone Diathermy: 40 to 65 dB, continuous tone Advisory/Time Expire: 0 to 65 dB, short tones Phaco/Vacuum: 0 to 65 dB, continuous tones Valid Key: Factory set and not adjustable Volume Accuracy: 6 dB</p> <p>Proportional and Continuous* Reflux @ Sea Level Pressure Range: 26 to 140 mmHg (35 - 187 hPa) Pressure Accuracy: ± 10 % of setpoint + 5 mmHg (7 hPa) *Total available Reflux volume: 7 cc (7 mL) replenishable via Aspiration</p> <p>INTREPID® AutoSert® IOL Injector: Max Speed: 4.4 mm / s</p>

1. INSTALLATION

1.1 Unpack Console

- 1.1.1 Cut the packing straps and then remove the top cover. Refer to Figure 1-12 for packing configuration.
- 1.1.2 Remove all the accessories and set aside; (operator's manual, dust cover, display cover, remote control, IV pole hanger, cassette pack and reconstitution BSS bag rack)
- 1.1.3 Remove the bottom assembly of foam packing material.
- 1.1.4 Remove the outer cardboard piece.
- 1.1.5 With the console remaining strapped to the pallet, tilt it up with caster end down. It is recommended that you request assistance of someone during this step.
- 1.1.6 Loosen the Velcro strap holding the console to the pallet
- 1.1.7 Carefully lift and slide the console off the bottom foam packing material.
- 1.1.8 Lift the top foam material off the console and remove the plastic shipping cover.
- 1.1.9 Loosen and remove the Velcro strap that is securing the display.
- 1.1.10 Pivot the display up and remove the protective foam packing material and plastic sheet taped to the display.
- 1.1.11 Pull the red plastic shipping cap from the top of the IV pole.
- 1.1.12 Rotate the work surface to gain access to the Active Irrigation drawer, open the drawer and remove all the foam packing material.

1.2 Unpack Footswitch

- 1.2.1 Open the box containing the footswitch and then remove the top packing foam.
- 1.2.2 Remove the footswitch from the box and plastic shipping bag.
- 1.2.3 Pull the packing foam out from around the footswitch treadle.

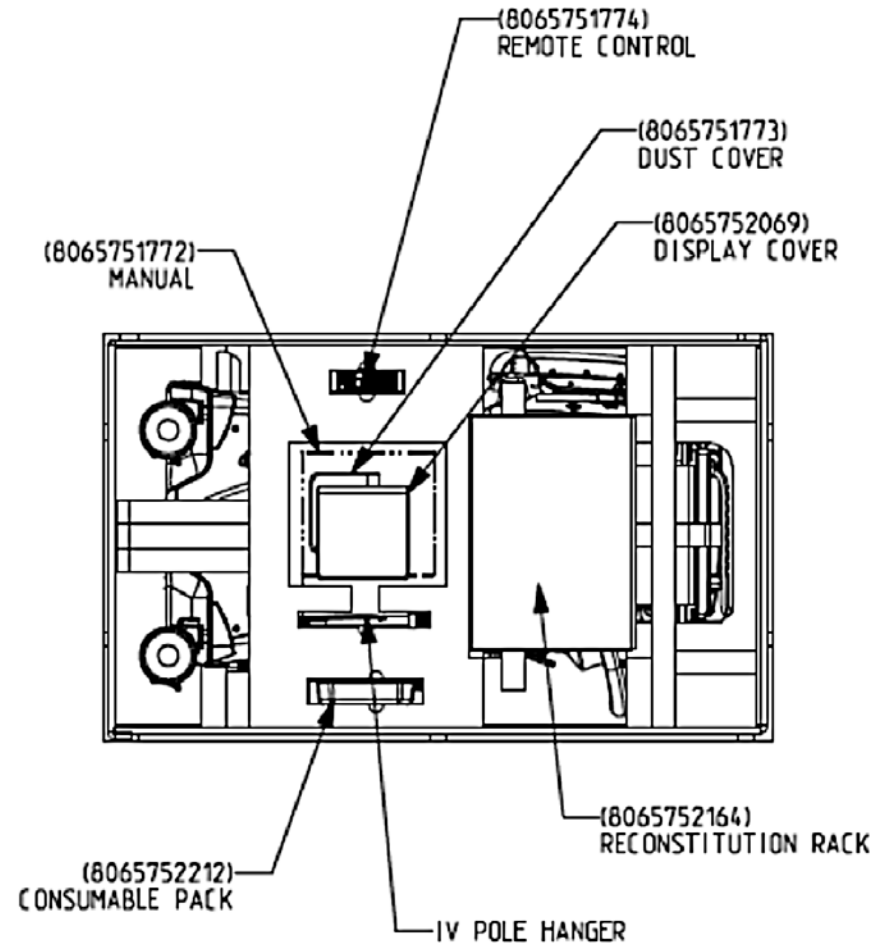


Figure 1-12 Packing Configuration

1.3 Console Setup

- 1.3.1 Install the IV pole's bottle hanger.
- 1.3.2 Install the batteries into the remote control.
- 1.3.3 Hang the footswitch on the footswitch hanger hooks, located on back of console.
- 1.3.4 Rotate the display to the operational position. Deploy the tray arm assembly to its working position.

1.4 Localized Setting

- 1.4.1 Plug console into power outlet and turn on.
- 1.4.2 Navigate to |System Settings|General| to set the Date & Time (see Figure 1-13).



Figure 1-13 System Settings - General Tab for Setting Date and Time

- 1.4.3 Within the |System Settings|General| tab you can also input a System Name, this is optional and can be done by the user. This name will be displayed in the upper right section of the Backup/Restore dialog screen.
- 1.4.4 Navigate to |System Settings|Wireless| to setup the wireless footswitch and, if needed, Wi-Fi settings (see Figure 1-14).



Figure 1-14 System Settings - Wireless Tab for Footswitch Setup

1.5 Complete the Service Test Procedure (STP).

2. PACKING THE SYSTEM FOR TRANSIT

To avoid damage during transport, careful preparation of the instrument is required prior to placing it in a vehicle. The display screen and instrument tray must be properly secured using straps and cushion material.

Additionally, the footswitch must be placed in “shipping” mode to avoid draining the battery. The constant movement incurred during transit will cause the footswitch to “wake up” thereby using battery power.

- 2.1 Using the photo shown in Figure 1-15 as an example, secure the display screen and instrument tray as necessary in preparation for transit. **NOTE: Materials from the original shipping container are used in this example.**

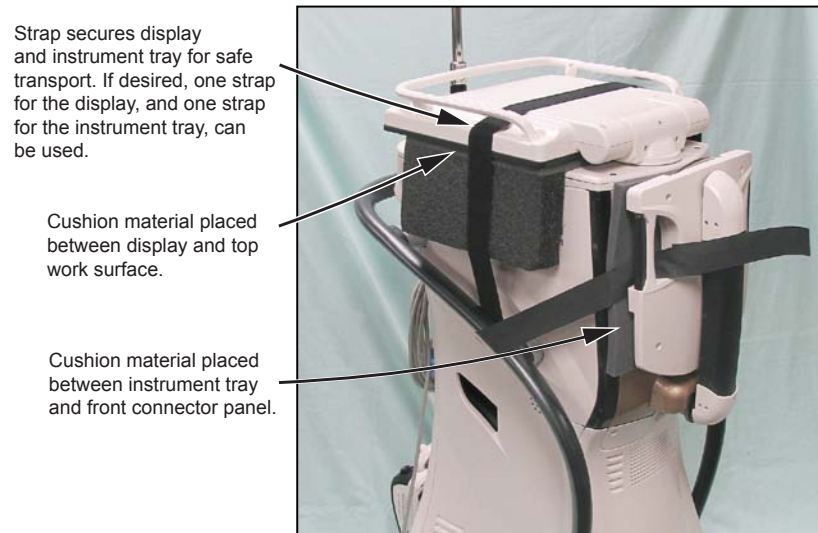


Figure 1-15 Example of Properly Packing the System for Transit

- 2.2 Set the footswitch to “shipping” mode by pressing the switch shown in Figure 1-6 with a cotton swab or other instrument that can reach the recessed switch without damaging the rubber covering.

SECTION TWO - THEORY OF OPERATION

The *Centurion®* Vision System is a software-driven electromechanical device designed to delivery state-of-the-art performance for all aspects of cataract lens extraction. Figure 2-1 shows a block diagram of the system. A general description of the diagram follows.

POWER

The system receives AC power from the facility through the 10 A/250 V Power Entry Switch A21. This fused switch delivers AC power to the 750 W Power Supply A8 which provides 24 VDC and 12 VDC to the Multifunction Input/Output (MFIO) PCBA. The MFIO manages and distributes the console 24 VDC bus.

In the event of AC or power supply failure, two 12 V lead acid batteries in series provide backup (less than one hour). In addition, the batteries will charge the footswitch battery if the AC power is off.

SYSTEM COMMUNICATIONS

The main system communication network is composed of a pair of FlexRay™ channels that are routed throughout the system in a linear topology fashion with the bus termination circuitry residing on the end nodes of the network (the Host and US subsystems).

MULTIFUNCTION INPUT/OUTPUT (MFIO)

The MFIO PCBA functions as a system backplane, distributes the main 24 VDC supply and FlexRay™ communication buses, as well as providing the electronics and software needed to control or interface with a number of modules shown in Figure 2-1 and listed below:

- AC/DC power supply
- System backup battery
- IV Pole
- Pneumatics air source
- Patient Eye Level (PEL) LED's
- Wireless footswitch

- Wired footswitches
- Wireless footswitch contactless charger
- Audio
- System fans
- Standby switch
- Upper Backplane panel

HOST

The Host assembly is comprised of an embedded computer board, media devices (e.g. USB), system communication controllers and input-output ports. The Host is responsible for displaying the Graphic User Interface and communication of Surgical Step sequence parameters to the subsystems via the FlexRay™ communication bus.

ULTRASONICS

The Ultrasonics Assembly provides the phacoemulsification handpieces with power for longitudinal and/or torsional (oscillatory) motion of the tip. The amount of ultrasonic motion and type of motion (Torsional vs. Longitudinal) is configured by the surgeon on the touchscreen/GUI, communicated by the Host to the Ultrasonic subsystem and then controlled by the surgeon through the footswitch. During ultrasonic power delivery, the Fluidics Aspiration and Irrigation subsystems provide simultaneous irrigation and aspiration to maintain the anterior chamber and remove cataractous lens material.

AutoSert® IOL Injector Handpiece - The Ultrasonic subsystem electrically drives the IOL Injector Handpiece motor as well as supporting the simultaneous preparation of two ultrasonic handpieces. The motorized IOL handpiece functions, including injection speed and dwell, are controlled by the system. IOL injection is fully controlled by the surgeon through the footswitch. An IOL injection speed control loop monitors actual injection speed and prevents excessive injection speed relative to the requested speed.

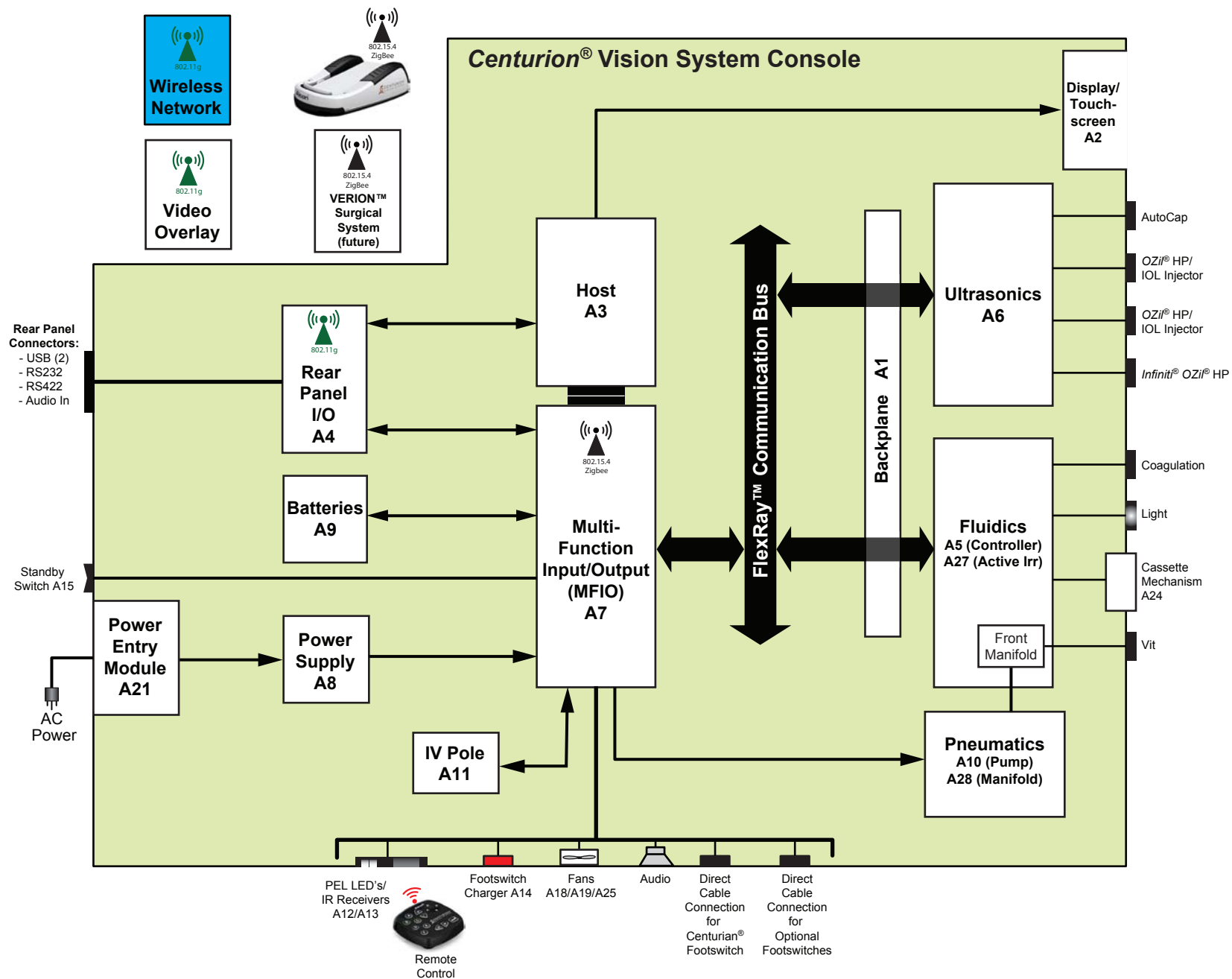


Figure 2-1 System Block Diagram

Automated Capsulorhexis - The Ultrasonic subsystem drives the *Intrepid*[®] Capsulotomy Device (ICD) used to perform capsulorhexis in the Capsulotomy mode of operation. The U/S Controller PCB delivers power to the resistive heating element on the device which can "cauterize" a capsulotomy diameter of 5.0 mm \pm 0.25 mm.

FLUIDICS

The main function of the Fluidics system is to provide irrigation (active or gravity) and aspiration to the surgical site during a cataract removal procedure. Pressure sensors enable the system to detect an overpressure or underpressure condition relative to a surgeon-selected IOP target setting. Additional control features are provided to allow adjustment to the level of flow compensation based on the surgeon's observations of the anterior chamber fluctuations. This provides flexibility to customize the system to accommodate for differences in surgical technique, incision size, tip/sleeve selection, or surgeon preference. Figure 2-2 shows a diagram of the fluid flow in the fluidics system.

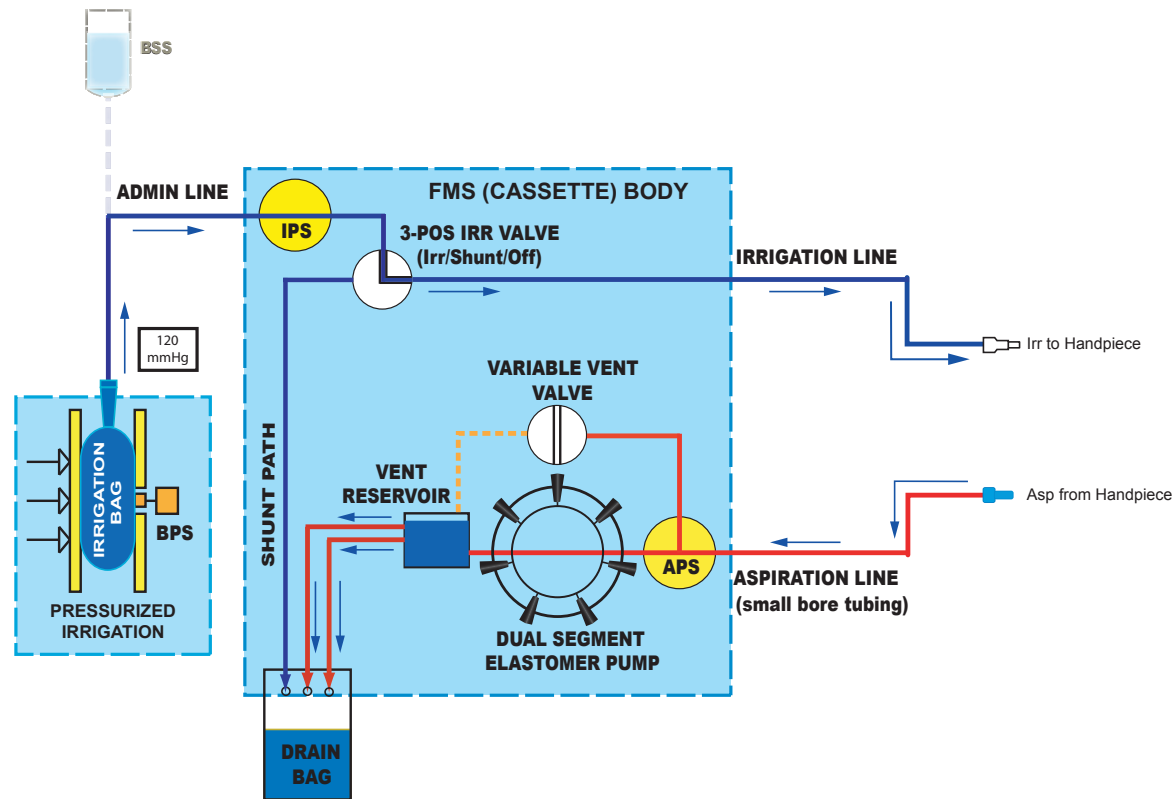


Figure 2-2 Fluidics Fluid Flow Diagram

Irrigation/Aspiration - The fluidics subsystem assembly uses independent irrigation and aspiration pressure sensors (Irrigation Pressure Sensor (IPS) and Aspiration Pressure Sensor (APS)) to measure the irrigation and aspiration pressure levels, and provide the surgeon with adjustable fluidics parameters (vacuum, flow and irrigation pressure). The pump mechanism utilizes the principle of positive displacement of fluid using a peristaltic pump. The fluidics assembly directs the flow of BSS® Irrigating Solution through the Fluidic Management System (FMS; commonly referred to as the "cassette") by way of rotary irrigation and vent valves.

The fluidics subsystem monitors the system FlexRay™ communication bus in order to respond to footswitch commands for fundamental fluidics operation of a phacofragmentation surgical system. The fluidics subsystem first enables irrigation flow by turning the irrigation valve in the FMS body to the 'ON' position. Based on footswitch command, the system then enables aspiration flow by turning the peristaltic pump motor while simultaneously irrigating the eye. While the fluidics subsystem is controlling the rotary irrigation valve, vent valve and aspiration pump, the values that it detects on the IPS and APS are communicated to the surgeon via the system display. During aspiration flow, a vacuum tone that emanates from the system speakers can be heard that changes in pitch with response to vacuum levels detected by the APS.

Active Irrigation - The Active Irrigation assembly accepts a flexible irrigating solution bag containing Balanced Salt Solution (BSS® Irrigating Solution) and works in conjunction with the Active Irrigation FMS to deliver irrigation to the surgical site and maintain anterior chamber pressure during a procedure. The flexible irrigation solution bag is squeezed between two plates, a stationary plate and a moving push plate driven by a stepper motor, and the bag pressure is monitored by the Bag Pressure Sensor that is part of the stationary plate.

During operation, irrigation pressure is controlled in a closed loop manner via input from an Irrigation Pressure Sensor (IPS) within the FMS. The system estimates irrigation path pressure losses based on flow rate and fluid path resistance, then adjusts the pressure at the IPS to compensate for these losses and better maintain downstream fluid pressure at the anterior

chamber. This real time adjustment in response to changes in flow rate provides for a more stable intraocular pressure (IOP) than can be achieved with gravity based systems.

Gravity Irrigation - The system uses an automated IV Pole assembly to raise and lower the irrigation fluid container, thereby controlling irrigation pressure by the height of the container. Gravity irrigation is available only when the Gravity Irrigation FMS is installed.

The fluidics system also provides the following items:

- Coordinates UltraVit® probe drive pressure pulses by way of valve drive and pressure sensor feedback for balanced control of the two pressure lines for the UltraVit® probe
- Provides power and control for the Convenience Task Light

PNEUMATICS

The Pneumatics Assembly, in conjunction with the MFIO subsystem, supplies and controls the air supply to operate the UltraVit® Vitrectomy probe. It is comprised of a pump, support valves and a pressure sensor.

The UltraVit® probe functions by way of alternating pressure applied by control valves to either side of an internal diaphragm that is attached to an inner (cutting) cannula of the probe. The motion induced on the diaphragm then creates the guillotine cutting action by the inner cannula against a port opening on the side of the outer cannula. The cut rate is programmable by the user from Cut-Off to 5000 cuts per minute.

DISPLAY/TOUCHSCREEN

The primary components of the Display Assembly include an LCD, Touch Screen, backlit logo, and Control PCBA. The assembly also contains the structural components that allow it to move to various positions to accommodate different user positions around the front of the console.

The 19" LCD is an LED-backlit, 1280 x 1024 SXGA display that displays the Graphical User Interface (GUI). The LCD has a dimming range of 10% for minimum brightness to 100% for maximum brightness. The default setting is 100%.

The 19" resistive Touch Screen is mounted directly in front of the LCD and is the primary user input device for the system. The Touch Screen is a 5-Wire Glass Film resistive touch screen with a zero-bezel construction. There is a slight perimeter around the Touch Screen in order to protect the glass edges and visually hide the exposed edges of each layer of the Touch Screen.

The Display Assembly utilizes three primary cables that run from the Host module, through the Display Mount assembly, into the Display Arm assembly, and then to the Display assembly. One of these cables carries the LVDS signals from the video card of the Host directly to the LCD. Another cable carries power, and the third carries USB signals.

The Display Assembly is mounted to the Display Arm Assembly which in turn is mounted to the Display Mount Assembly. The Display Arm and Mount Assemblies provide the variable positioning movements of the Display Assembly.

REAR INPUT/OUTPUT (I/O) PANEL

The Rear I/O Panel provides the interface to support the following rear panel connections:

- USB - Provides access to the Host USB.
- RS232 - DB9 connection for communication with the Video Overlay system.
- RS422 - RJ45 ethernet connection for future use.
- Audio In - Provides audio filtering and amplification.

Additionally, the Rear I/O Panel PCBA provides wireless network connectivity and a wireless connection to the High Definition Video Overlay (HDVO) system.

FOOTSWITCH ASSEMBLY

The footswitch assembly allows the surgeon to command the instrument through various ranges of surgical control. The system can accommodate a number of Alcon footswitches starting with the *Centurion*[®] footswitch in either wireless mode or a direct cable connection to the console. In addition, the console provides a connector for use of the *Legacy*[®]/*Accurus*[®] footswitch as well as a redesigned version of the *Laureate*[®] footswitch.

The *Centurion*[®] footswitch has programmable control ranges based on treadle angular position:

- Position 0 - Resting position; all footswitch controlled surgical functions are stopped.
- Position 1 - Irrigation
- Position 2 - Irrigation and aspiration
- Position 3 - Irrigation, aspiration, and Phaco or other energy control parameter

Inside of the footswitch, Position 0 is indicated by a mechanical rest position switch, and the Position 0 feedback from an absolute encoder that is mechanically coupled to the treadle rotation shaft indicating treadle angular displacement. Footswitch detents identify the transition from one footswitch position to another, and are felt by the surgeon when slightly more pressure is required to press the foot treadle from one position into the next. The Footswitch detects and communicates transitions of the footswitch treadle between various footswitch positions (treadle angular position and button states) and communicates this to the MFIO subsystem.

Footswitch Wireless Communication - Signals to the MFIO are sent via a highly reliable, secure and proprietary variant of an IEEE[®] 802.15.4 “zigbee” wireless interface. To ensure the uniqueness and security of the console and footswitch pair, unique identifiers, such as the footswitch serial number and data encryption key are part of the transmit packet. The console filters all incoming packets based on the footswitch serial number present in the packet. In this manner, the console and footswitch pair become immune to wireless interference from other devices.

If cabled to the console for battery charging or to remove the wireless capability, the footswitch to console communication is accomplished by way of a Controller Area Network (CAN) interface to the MFIO subsystem. Footswitch data from the Multifunction subsystem is then transmitted in real-time to other system components via the FlexRay[™] communication bus.

The wireless footswitch stores on hangars on the back of the console for an inductive overnight charging cycle to replenish its internal lithium ion battery. The act of either hangar charging, or cabling also creates the unique pairing partnership of footswitch to console based on device serial number so that multiple Systems with wireless footswitches may be used in close proximity without crosstalk interference.

REMOTE CONTROL

The remote control provides a remote navigational interface to the Graphical User Interface through the InfraRed (IR) receiver located on the PEL PCBA. The signal is transmitted to the Host Module through the MFIO PCBA.

VIDEO OVERLAY

The optional Video Overlay provides a means of capturing surgical parameters overlayed on top of microscope video for later review off line. The system must be used in conjunction with a DVR or VCR to capture the combination of video and parameter visual indications. The VideOverlay system must be connected to the system by a cable to the rear panel while the High Definition VideOverlay system may be connected wirelessly (communicates through wireless connection on Rear I/O PCBA).

SECTION THREE - PARTS LOCATION AND DISASSEMBLY

OUTER PANEL LOCATIONS

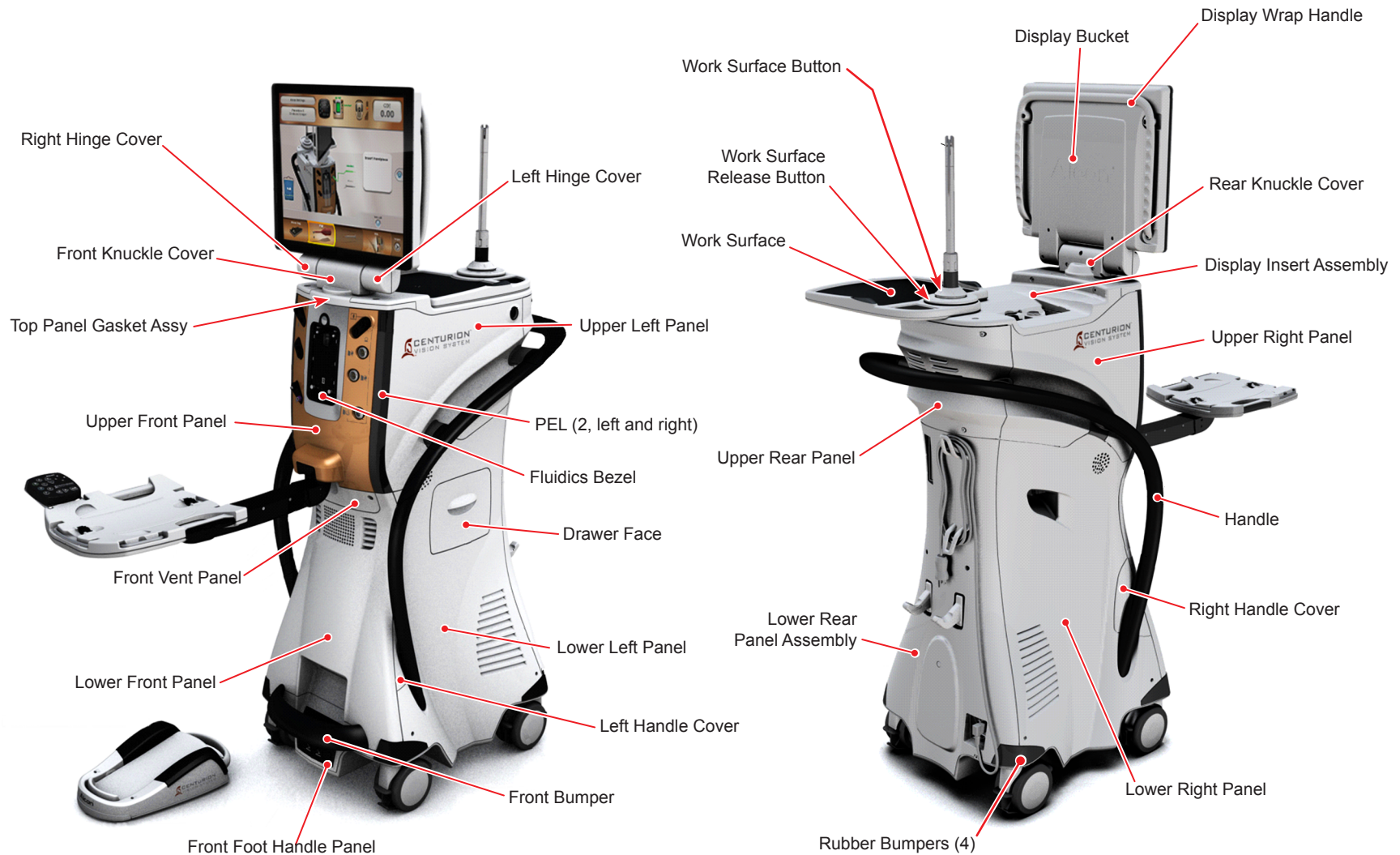


Figure 3-1 Outer Panel Location Diagram

COMPONENT LOCATION DIAGRAM

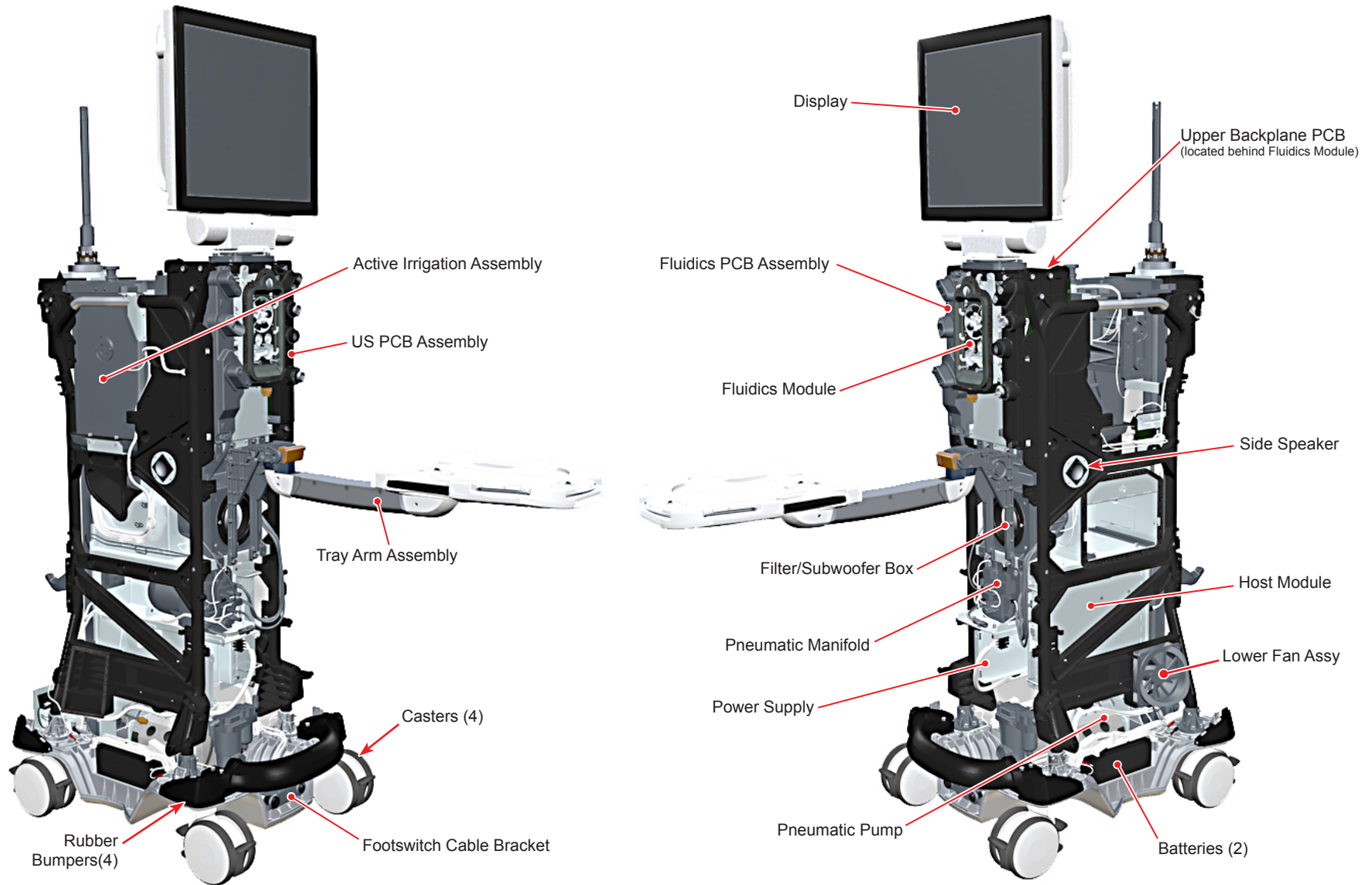


Figure 3-2 Component Location Diagram

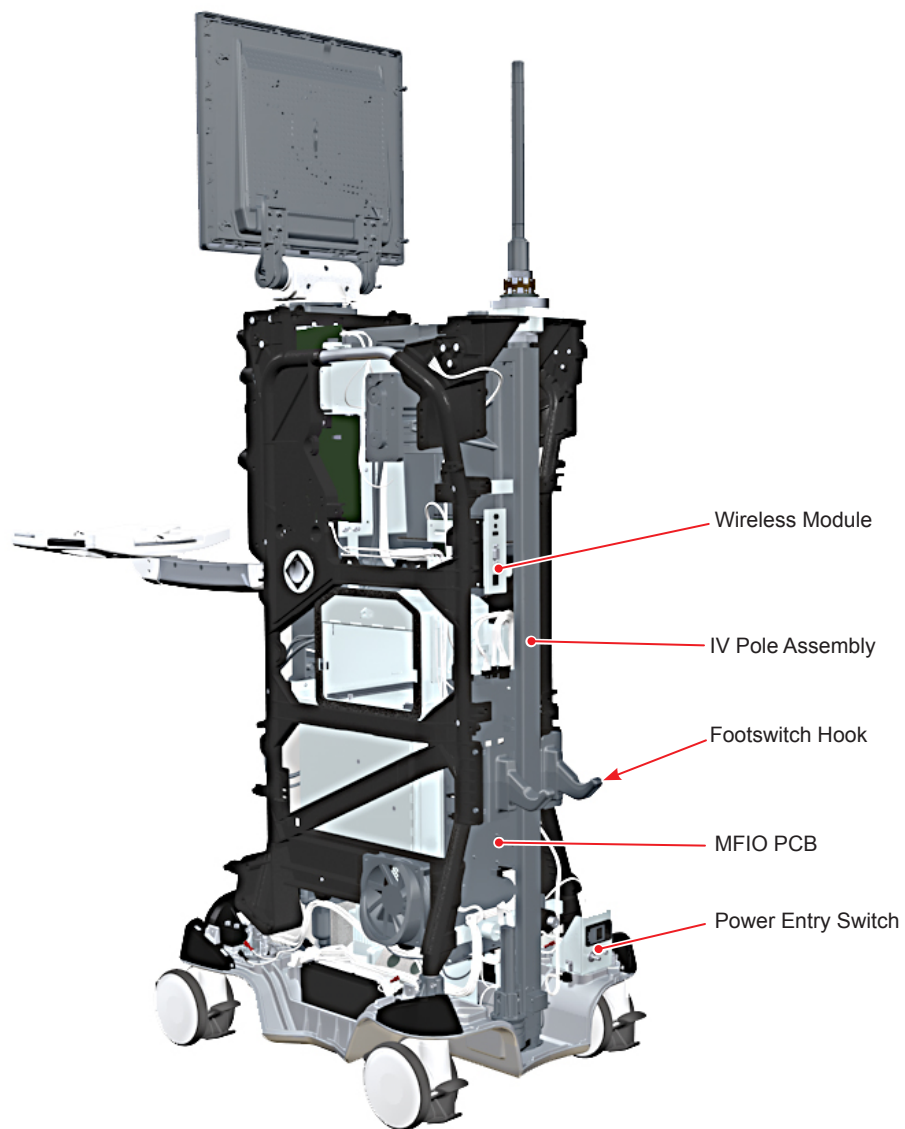


Figure 3-2 **Component Location Diagram (continued)**

Table 3-1 Disassembly Quick Reference Guide

STEP #	DESCRIPTION	PART #	ITEMS TO REMOVE FIRST	HARDWARE (see Table 3-2 for screw specifications)	NOTES
OUTER PANELS					
1	Upper Rear Panel	215-2598-00x	None	3 mm hex captive screw (4)	
2	Lower Rear Panel	215-2822-50x	1	3 mm hex captive screw (2)	CAUTION: Cable connected to MFIO PCB.
3	Front Vent Panel	215-2155-50x	None	3 mm hex captive screw (2)	
4	Upper Front Panel	215-2301-50x	3	3 mm hex captive screw (2)	
5	Lower Front Panel	215-2018-50x	3, 4	none	
6	Front Bumper	215-1278-00x	3, 4, 5	5 mm hex screw (807-047) and washer (4 ea.)	
7	Front Foot Handle Panel	215-2346-00x	3, 4, 5, 6	3 mm hex screw (807-015) (2)	
8	Work Surface	215-1833-50x	None	3 mm hex screw (807-043) (4)	
9	Display Insert Assembly (Top Cover)	215-1837-50x	8	3 mm hex captive screw (4) 2.5 mm hex screw (807-184) (2)	
10	Upper Right Panel	215-1323-00x	1, 9 (loosen screws only)	3 mm hex screw (807-015) (3)	
11	Upper Left Panel	215-1322-00x	1, 9 (loosen screws only)	3 mm hex screw (807-015) (3)	
12	Lower Left Panel	215-1324-00x	1, 2, 11	3 mm hex screw (807-014) (6) and washer (3)	
13	Lower Right Panel	215-1339-50x	1, 2, 10	3 mm hex screw (807-014) (6) and washer (3)	
14	Left Handle Cover	215-2714-50x	3, 4, 5, 11,12	3 mm hex screw (807-013) (2)	
15	Right Handle Cover	215-2715-50x	3, 4, 5, 10,13	3 mm hex screw (807-013) (2)	
16	Display Wrap Handle Display Bucket	215-1866-00x 215-2475-00x	None	4 mm hex screw (807-028) (4) 3 mm hex screw (807-014) (4)	
CONSOLE COMPONENTS					
17	Fluidics Module and Fluidics PCB Assembly	215-1660-50x 215-1007-50x	3, 4	3 mm hex captive screw (4) 3 mm hex captive screw (2)	
18	Ultrasonics (U/S) PCB Assembly	215-1009-50x	3, 4	3 mm hex captive screw (2)	
19	Upper Backplane PCB	215-1277-55x	3, 4, 17, 18	2.5 mm hex screw (807-005) (8)	
20	Active Irrigation (AI) Assembly	215-2736-50x	8, 9	3 mm hex screw (807-017) (4) and washer (4)	
21	Tray Arm Assembly	215-1091-50x	3, 4, 5	5 mm hex screw (807-044) (4)	
22	Pneumatic Manifold	215-1010-50x	3, 4, 5	3 mm hex captive screw (2)	

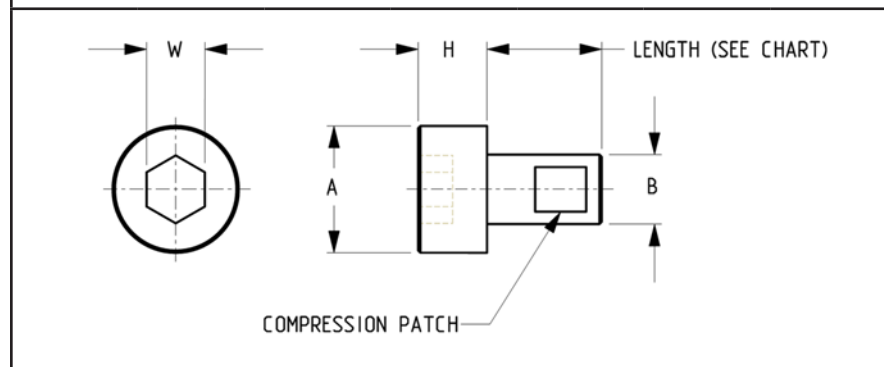
Table 3-1 Disassembly Quick Reference Guide

STEP #	DESCRIPTION	PART #	ITEMS TO REMOVE FIRST	HARDWARE (see Table 3-2 for screw specifications)	NOTES
23	Power Supply	215-2421-00x	3, 4, 5	2.5 mm hex captive screw (2)	
24	Host Module	215-1100-50x	3, 4, 5	2.5 mm hex captive screw (2)	
25	Filter/Subwoofer Box	215-1796-50x	3, 4, 5	3 mm hex screw (807-014) (4) and washer (4)	
26	Wireless Module	215-2920-50x	1, 2	3 mm hex screw (807-017) (2)	
27	IV Pole Assembly	215-1787-50x	1, 2, 8, 9	5 mm hex screw (807-041) (4) -> 3 mm hex screw (807-015) (2) -> 10 mm nut and washer (2 ea) ->	- Work Surface Hub - Top of IV Pole - Bottom of IV Pole
28	Footswitch Hook	215-1533-00x	1, 2	3 mm hex screw (807-014) (4)	
29	MFIO Modem	215-2438-55x	1, 2, 28	Standard head screw (2)	
30	MFIO Battery		1, 2, 28	none	
31	MFIO PCB	215-1353-55x	1, 2, 8, 9, 27, 28	3 mm hex screw (807-013) (7)	
32	Lower Fan Assembly	215-2857-00x	1, 2, 11, 12	3 mm hex screw (807-023) (4)	
33	Footswitch Charger PCB	215-2008-55x	1, 2	3 mm hex screw (807-014) (4) Retainers (215-2044-004) (4) 7 mm nut & star washer ->	- for cable clamp
34	Display Assembly	215-2849-00x	16	5 mm hex screw (807-043) (8)	
35	Batteries	190-020	1-5, 10-13	3 mm hex captive screw (2)	
36	Pneumatic Pump Assembly	215-1027-50x	1-7, 10-13	3 mm hex captive screw (4)	
37	Standby Switch	215-2286-50x	1	3 mm hex screw (807-013) (3)	
38	Rubber Bumpers	See procedure for Part Numbers	See procedure for additional information	None	
39	Casters	215-1792-00x	See procedure for additional information	24 mm nut and washer	
40	PEL Assemblies	Right: 215-1457-50x Left: 215-1458-50x	Right: 3, 4, 10 Left: 3, 4, 11	3 mm hex screw (807-018) (4)	
41	Side Speakers	215-1110-00x	Right: 1, 2, 10, 13 Left: 1, 2, 11, 12	2 mm hex screw (786-292) (4)	
42-46	Footswitch Disassembly				

Table 3-2 Screw Reference Chart *

Part #	Size	Length	A (max)	B (max)	H (max)	W
807-005	M3 x 0.5	12.0	5.5	3.0	3.0	2.5
807-013	M4 x 0.7	8.0	7.0	4.0	4.0	3.0
807-014	M4 x 0.7	10.0	7.0	4.0	4.0	3.0
807-015	M4 x 0.7	12.0	7.0	4.0	4.0	3.0
807-017	M4 x 0.7	20.0	7.0	4.0	4.0	3.0
807-018	M4 x 0.7	25.0	7.0	4.0	4.0	3.0
807-023	M4 x 0.7	50.0	7.0	4.0	4.0	3.0
807-028	M5 x 0.8	16.0	8.5	5.0	5.0	4.0
807-041	M6 x 1.0	10.0	10.0	6.0	6.0	5.0
807-043	M6 x 1.0	16.0	10.0	6.0	6.0	5.0
807-044	M6 x 1.0	20.0	10.0	6.0	6.0	5.0
807-047	M6 x 1.0	35.0	10.0	6.0	6.0	5.0
807-184						

* All units in mm.



DISASSEMBLY INSTRUCTIONS

NOTES:

- Left and right orientation is referred to from the console perspective.
- Replacement is performed in reverse order of disassembly unless noted otherwise.
- Refer to Figures 3-1 and 3-2 for component location.

REMOVAL OF OUTER PANELS (see Figure 3-1)

The outer panels are designed so that each upper panel extends over the panel below it, and the rear panel extends over the side panels. Therefore, when removing the outer panels, the general rule is that an upper panel must be removed in order to remove a lower panel. Additionally, the rear panel must be removed in order to remove a side panel. In some cases, panel access may be allowed by simply loosening the screws securing the panel above it. The following instructions will enable disassembly in a timely yet safe manner.

1. UPPER REAR PANEL (215-2598-00X)

- 1.1 Loosen four 3 mm captive screws securing Upper Rear Panel to chassis and remove panel from console.

2. LOWER REAR PANEL (215-2822-50X)

- 2.1 Remove Upper Rear Panel.
- 2.2 Unplug power cord from rear of console.
- 2.3 Loosen two 3 mm captive screws securing top of Lower Rear Panel to console.

CAUTION

The Footswitch Charging PCB is mounted the Lower Rear Panel and is connected to the console (MFIO PCB) by W147 (see Figure 3-3). After removal, panel can be laid flat on floor without disconnecting cable.

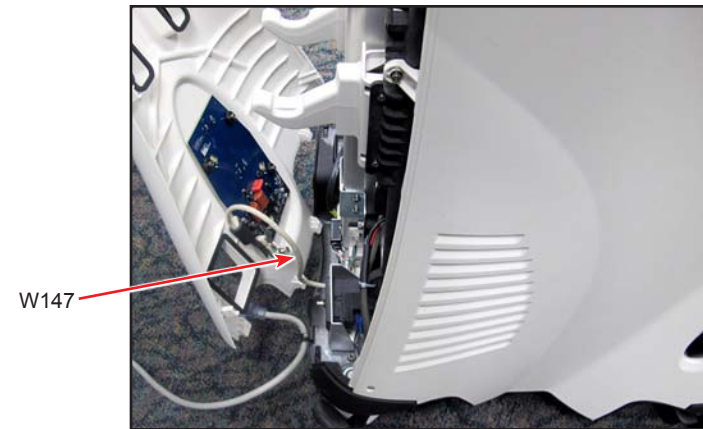


Figure 3-3 Cable W147 connecting Footswitch Charging PCB to MFIO PCBA

- 2.4 Lift panel up to clear tabs securing bottom of panel, then remove from console. Lay panel on floor next to console.
- 2.5 *To completely remove panel from system:*
 - 2.5.1 Remove 40 A fuse on MFIO PCB (see Figure 3-24).
 - 2.5.2 Disconnect cable W147 from console connectors J25 and J39 of MFIO PCB.
 - 2.5.3 Cut cable ties securing cable to console.

3. FRONT VENT PANEL (215-2155-50X)

- 3.1 Loosen two 3 mm captive screws securing Front Vent Panel to console.
- 3.2 Remove Vent Panel.

4. UPPER FRONT PANEL (215-2301-50X)

- 4.1 Remove Front Vent Panel.
- 4.2 Turn Display as shown in Figure 3-4, and loosen two 3 mm captive screws securing top of Upper Front Panel to Top Display Panel.



Figure 3-4 Captive Screws Securing Top of Upper Front Panel to Top Display Panel

- 4.3 Reposition Tray Arm as necessary to allow clearance for Upper Front Panel to be pulled straight out and away from system.
- 4.4 Remove Upper Front Panel.

5. LOWER FRONT PANEL (215-2018-50X)

- 5.1 Remove Front Vent Panel
- 5.2 Remove Upper Front Panel.
- 5.3 Lift panel up to clear tabs securing bottom of panel, then remove from console.

6. FRONT BUMPER (215-1278-00X)

- 6.1 Remove Lower Front Panel
- 6.2 Loosen and remove four 5 mm hex screws and washers securing bumper to console.
- 6.3 Remove Front Bumper from console.

7. FRONT FOOT HANDLE PANEL (215-2346-00X)

- 7.1 Remove Front Bumper.
- 7.2 Remove two 3 mm hex screws securing panel to console. A ratcheting hex wrench is the preferred tool for this step.
- 7.3 Lift panel up to clear tabs securing bottom of panel, then remove from console.

8. WORK SURFACE (215-1833-50X)

- 8.1 Unscrew and remove Work Surface button (see Figure 3-5).

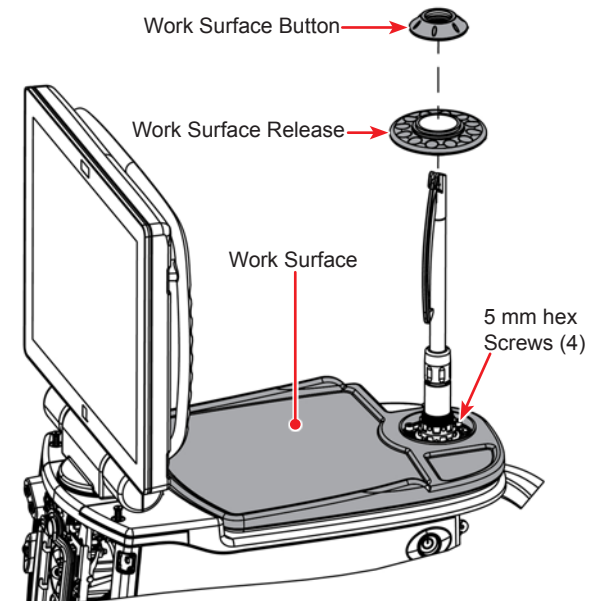


Figure 3-5 Removal of Work Surface Button and Release Button

- 8.2 Remove Work Surface Release button from IV Pole.
- 8.3 Loosen four 5 mm hex screws securing Work Surface to console.
- 8.4 Lift Work Surface up and remove from console.

9. DISPLAY INSERT ASSEMBLY (TOP COVER) (215-1837-50X)

- 9.1 Remove Work Surface.
- 9.2 Loosen four 3 mm captive hex screws securing Display Insert to console (see Figure 3-6). Reposition Display as necessary to access screws.
- 9.3 Loosen and remove two 2.5 mm hex screws securing Display Insert to console.
- 9.4 Grasp one side of the front part of the Display Insert (near display) and the back of the panel (near the IV Pole), then lift the panel up and back until both parts of the panel have cleared the “lip” of the chassis underneath the Display Insert Panel (see photo in Figure 3-6). Leave Display Insert in this position.
- 9.5 While maintaining the position of the Display Insert, lift the other side of the front part of the Display Insert and move backward until it clears the “lip” of the chassis.
- 9.6 Carefully lift and move Display Insert back taking care to reposition front captive screws and display as necessary to gain clearance. When clearance is achieved, remove Display Insert from console.

NOTE: There are concealed slots in the chassis that allow the captive screws to slide with panel as it is moved.

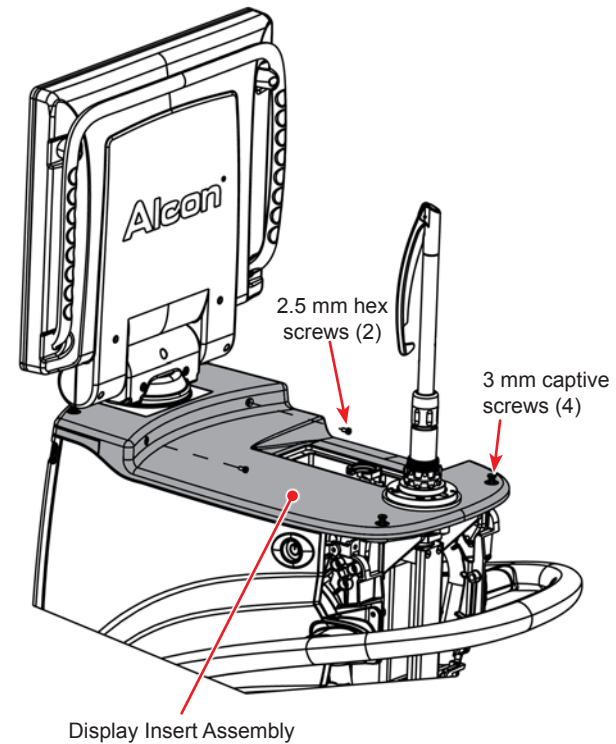


Figure 3-6 Removal of Display Insert Assembly

10. UPPER RIGHT PANEL (215-1323-00X)

- 10.1 Remove Upper Rear Panel.
- 10.2 Loosen four 3 mm captive screws and two 2.5 mm hex screws securing Display Insert Panel to chassis. Move work surface and display as necessary to access screws.
Loosening these screws allows the Display Insert Panel to be lifted to access screws securing Upper Right Panel.
- 10.3 Remove three 3 mm hex screws securing top of Upper Right Panel to console.
- 10.4 Move Display Insert as necessary and lift Upper Right Panel to clear tabs securing bottom of panel. Remove panel from console.

REPLACEMENT: When positioning panel and aligning tabs, you may have to leave bottom front tab out of place temporarily. When all other tabs are in place, apply pressure where bottom front tab is located until it “pops” into place.

11. UPPER LEFT PANEL (215-1322-00X)

- 11.1 Remove Upper Rear Panel.
- 11.2 Loosen four 3 mm captive screws and two 2.5 mm hex screws securing Display Insert Panel to chassis. Move work surface as necessary to access screws.
Loosening these screws allows the Display Insert Panel to be lifted so that screws securing Upper Left Panel can be accessed.
- 11.3 Disconnect Standby switch.
- 11.4 Remove three 3 mm hex screws securing top of Upper Left Panel to console.
- 11.5 Move Display Insert as necessary and lift Upper Right Panel up to clear tabs securing bottom of panel, then remove from console.

REPLACEMENT: When positioning panel and aligning tabs, you may have to leave bottom front tab out of place. When all other tabs are in place, apply pressure where bottom front tab

is located until it “pops” into place. Ensure that panel is not “flexed or bowed” and there are no gaps between panel and PEL assembly.

12. LOWER LEFT PANEL (215-1324-00X)

- 12.1 Remove Upper and Lower Rear panels.
- 12.2 Remove Upper Left panel.
- 12.3 Remove drawer by pulling it out as far as possible then pressing two the release tabs on each slide (on underside of drawer).
- 12.4 Remove six 3 mm hex screws and washers securing Lower Left Panel to console.
- 12.5 At drawer opening, release two tabs securing panel to drawer opening then pull panel out and away from console.

13. LOWER RIGHT PANEL (215-1339-50X)

- 13.1 Remove Upper and Lower Rear panels.
- 13.2 Remove Upper Right panel.
- 13.3 Remove six 3 mm hex screws and washers securing Lower Left Panel to console.
- 13.4 The panel is now held in place by a latch mechanism located just below the AI Chute in the console. The latch release is accessed from the rear through a hole in the sheet metal bracket that the MFIO PCB is mounted on (see Figure 3-7).

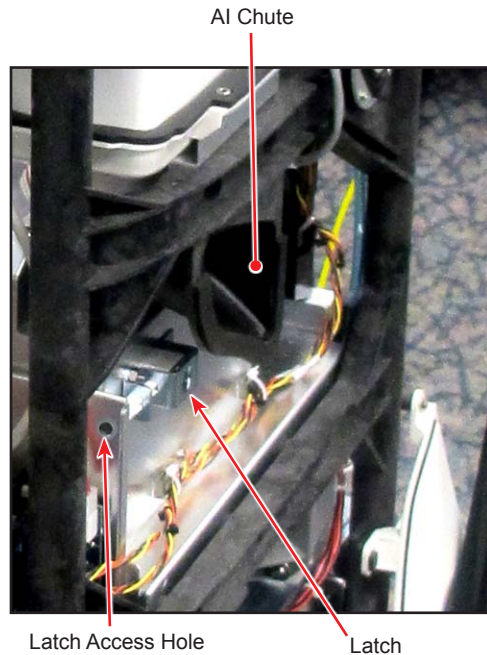


Figure 3-7 Lower Right Panel Latch Release (shown with panel removed)

- 13.5 Using a small screwdriver, push and turn the white latch release button. Remove panel from console.

REPLACEMENT: Ensure panel is properly seated into latch.

14. LEFT HANDLE COVER (215-2714-50X)

- 14.1 Remove Front Vent, Upper and Lower Front Panels.
- 14.2 Remove Upper and Lower Left Panels.
- 14.3 Remove two 3 mm screws securing Left Handle Cover to console.
- 14.4 Position Left Handle Cover as necessary so that it slides off tabs.
- 14.5 Remove Left Handle Cover from console.

15. RIGHT HANDLE COVER (215-2715-50X)

- 15.1 Remove Front Vent, Upper and Lower Front Panels.
- 15.2 Remove Upper and Lower Right Panels.
- 15.3 Remove two 3 mm screws securing Right Handle Cover to console.
- 15.4 Position Right Handle Cover as necessary so that it slides off tabs.
- 15.5 Remove Right Handle Cover from console.

16. DISPLAY WRAP HANDLE (215-1866-00X) AND DISPLAY BUCKET (215-2475-00X)

- 16.1 Remove four 4 mm screws securing Display Wrap Handle to display assembly. Remove Display Wrap Handle from system (see Figure 3-8).

CAUTION

REPLACEMENT: Be sure to install the Display Wrap Handle in the proper orientation. Installing handle upside down may result in a cracked display.

- 16.2 Remove four 3 mm hex screws securing Display Bucket to display assembly. Remove Display Bucket from system.

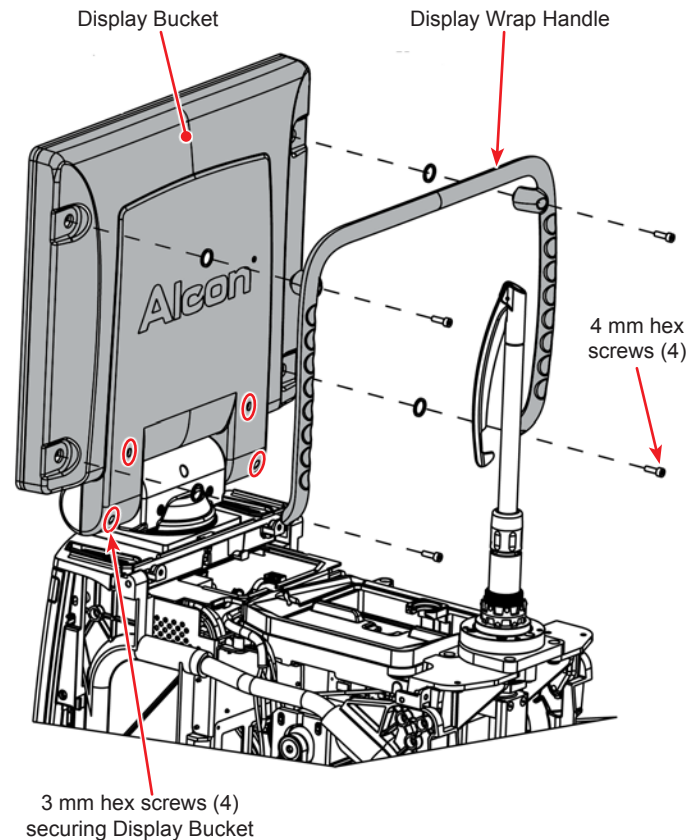


Figure 3-8 Display Wrap Handle and Display Bucket Removal

REMOVAL OF CONSOLE COMPONENTS

17. FLUIDICS MODULE (215-1660-50X) AND FLUIDICS PCB ASSEMBLY (215-1007-50X)

- 17.1 Remove Front Vent and Upper Front Panels.
- 17.2 Remove black Fluidics Bezel by pulling it straight out from Fluidics Module. Bezel is attached to module by cable – allow bezel to hang freely in front of Fluidics Module during remainder of procedure (see Figure 3-9).



Figure 3-9 Fluidics Module with Bezel Removed

- 17.3 Loosen four 3 mm captive hex screws securing top and bottom of Fluidics Module to chassis (see Figure 3-10).
- 17.4 Loosen two 3 mm captive hex screws securing Fluidics PCB Assembly to chassis.
- 17.5 Disconnect yellow and blue pneumatic tubing from Pneumatic manifold (see Figure 3-16).

REPLACEMENT: Make note of tubing routing for replacement.

- 17.6 Carefully pull both assemblies out from console and set on a working surface.

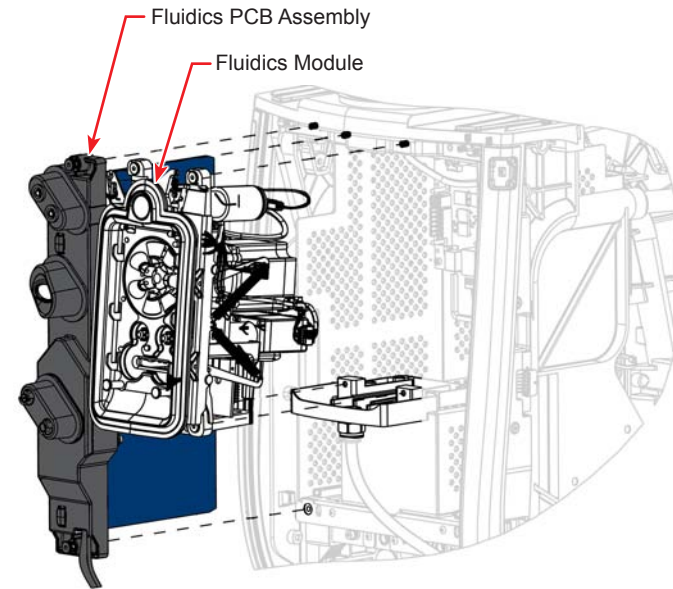


Figure 3-10 Fluidics Module and Fluidics PCB Assembly Removal

- 17.7 Disconnect J4, J5, J7, and J9 from Fluidics PCB. The two assemblies can now be separated.

REPLACEMENT:

- After reconnecting J4, J5, J7, and J9, carefully slide both assemblies into console making slight adjustments as necessary to ensure PCB seats properly into Upper Backplane.
- When securing assemblies to console, alternately tighten screws to ensure proper seating of PCB.

18. ULTRASONICS (U/S) PCB ASSEMBLY (215-1009-50X)

- 18.1 Remove Front Vent and Upper Front Panels.
- 18.2 Loosen two 3 mm captive hex screws securing top and bottom of U/S PCB Assembly to chassis.
- 18.3 Pull U/S PCB Assembly straight out from console and remove (Figure 3-11).

REPLACEMENT:

- Carefully slide assembly into place making slight adjustments as necessary to ensure PCB seats properly into upper backplane. Handpiece connector cables may need to be repositioned while assembly is sliding into place.
- When securing assembly to console, alternately tighten screws to ensure proper seating of PCB.
- HP Connector removal uses same tool as *Infiniti*® Vision System.

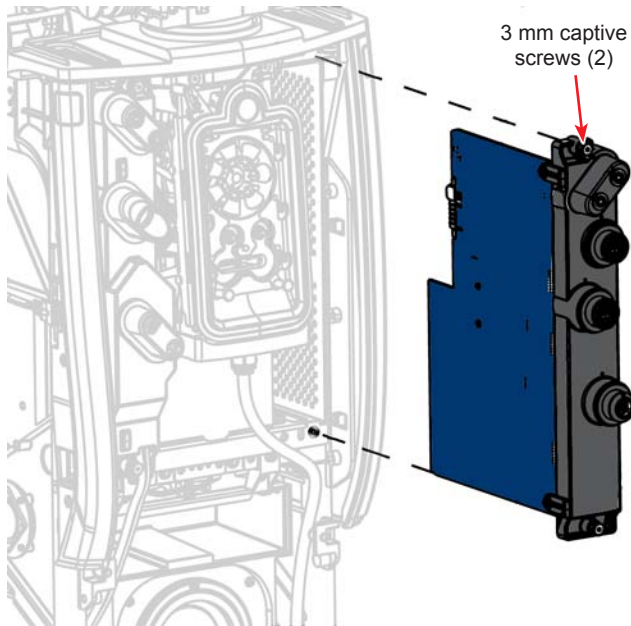


Figure 3-11 U/S PCB Assembly Removal

19. UPPER BACKPLANE PCB (215-1277-55X)

- 19.1 Remove Front Vent and Upper Front Panels.
- 19.2 Remove Fluidics Mechanism, Fluidics PCB, and U/S PCB Assemblies.
- 19.3 Disconnect J12, J16, J10 (may require screwdriver), J11, J4, J3, and J9 from Upper Backplane PCB.
- 19.4 Remove eight 2.5 mm hex screws securing Upper Backplane PCB to console.
- 19.5 Carefully pull Upper Backplane PCB off guide posts, rotate to clear display cables, and remove from system (Figure 3-12).

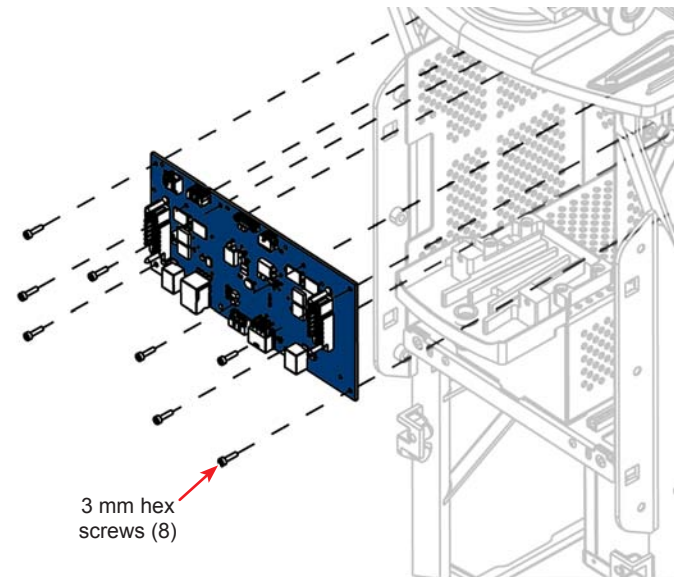


Figure 3-12 Upper Backplane PCB Removal

20. ACTIVE IRRIGATION (AI) ASSEMBLY (215-2736-50X)

- 20.1 Remove Display Insert Panel.
- 20.2 Disconnect J10, J12, J14, and J16 from Upper Backplane PCB.
- 20.3 Remove four 3 mm hex screws and washers securing AI Assembly to console.
- 20.4 Pull AI Assembly up and out of chassis moving the assembly as necessary to gain clearance for removal (see Figure 3-13).

REPLACEMENT: When lowering AI Assembly into console, ensure clearance of all cables. Assembly should not rest on or "pinch" any cables.

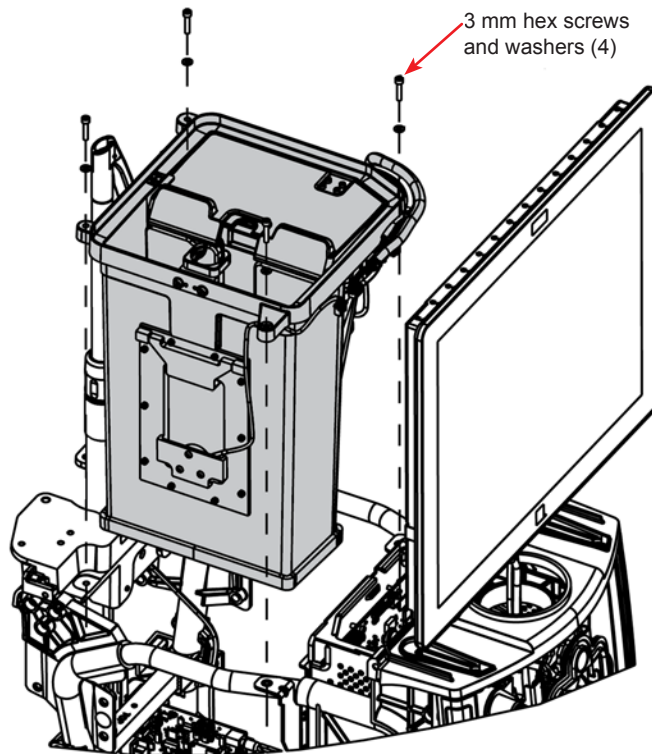


Figure 3-13 Active Irrigation Assembly Removal

21. TRAY ARM ASSEMBLY (215-1091-50X)

- 21.1 Remove Front Vent, Upper and Lower Front Panels.
- 21.2 Remove four 5 mm hex screws (bottom screws first) securing Tray Arm Assembly to chassis and remove from console (see Figure 3-14).

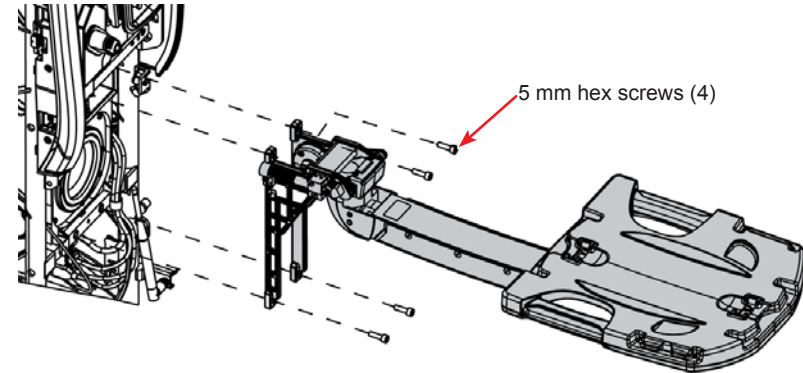


Figure 3-14 Tray Arm Assembly Removal

22. PNEUMATIC MANIFOLD (215-1010-50X)

- 22.1 Remove Front Vent, Upper and Lower Front Panels.
- 22.2 Disconnect blue tubing between Pneumatic Manifold and Vit Pump (see Figure 3-15).
- 22.3 Disconnect yellow and blue tubing between Pneumatic Manifold and Fluidics PCB Assembly (see Figure 3-16).
- 22.4 Disconnect cable W133 connectors from Pneumatic Manifold (includes A28SENS1).
- 22.5 Loosen two 3 mm captive hex screws securing Pneumatic Manifold to chassis (see Figure 3-17).
- 22.6 Slide Pneumatic Manifold forward and remove from console.

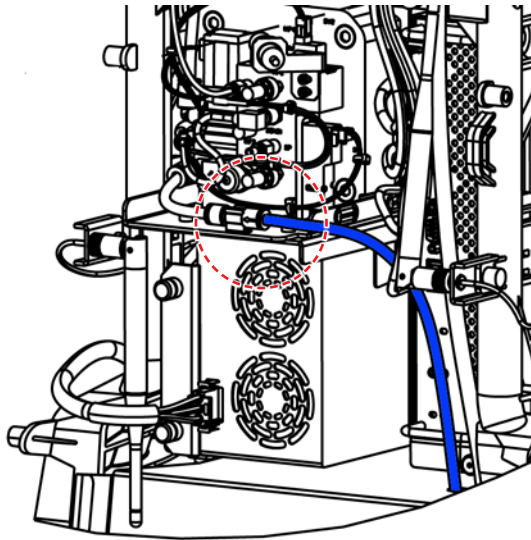


Figure 3-15 Pneumatic Tubing Connecting Pneumatic Manifold and Vit Pump

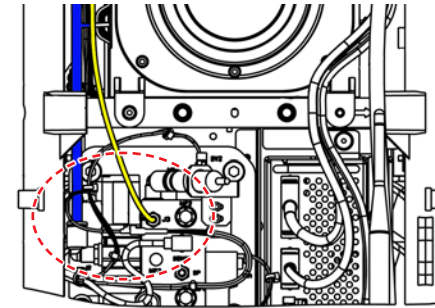


Figure 3-16 Pneumatic Tubing Connecting Pneumatic Manifold and Fluidics PCB Assembly

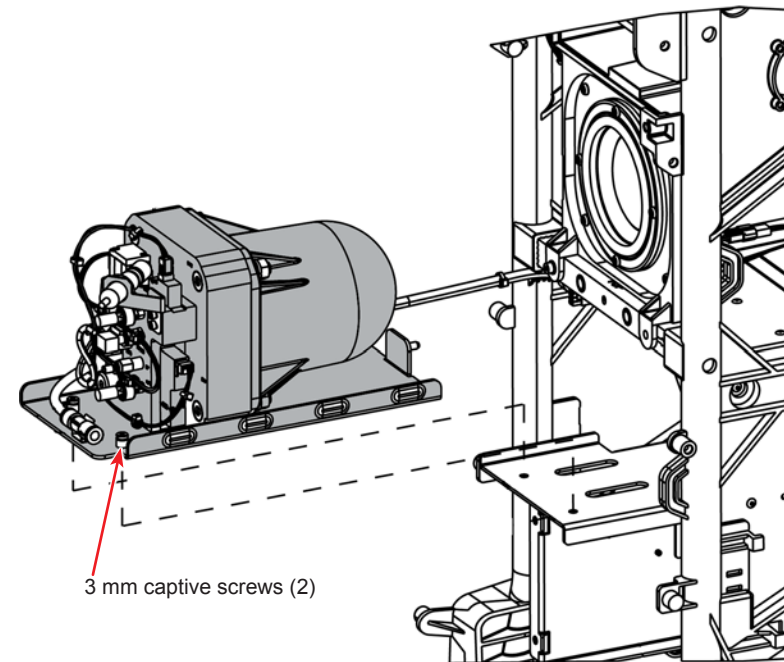


Figure 3-17 Pneumatic Manifold Removal

23. POWER SUPPLY (215-2421-00X)

- 23.1 Remove Front Vent, Upper and Lower Front Panels.
- 23.2 Disconnect W111 P1 from Power Supply.
REPLACEMENT: Antenna should be pointing down with Power Supply cable routed around it.
- 23.3 Loosen two 2.5 mm captive hex screws securing Power Supply to chassis (see Figure 3-18).
- 23.4 Slide Power Supply forward, adjusting position as necessary to clear antenna, and remove from console.

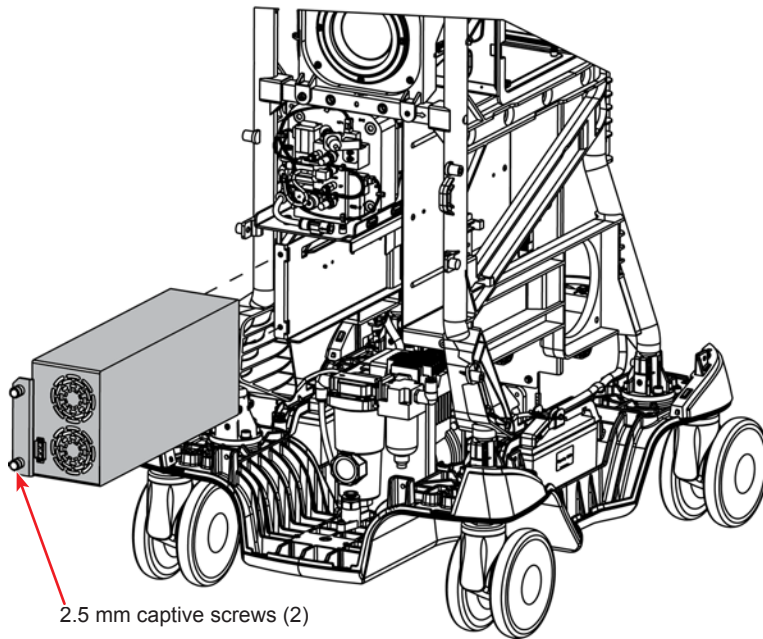


Figure 3-18 Power Supply Removal

24. HOST MODULE (215-1100-50X)

- 24.1 Remove Front Vent, Upper and Lower Front Panels.
- 24.2 Disconnect J10B (W164), J1A (W112), J1B (W126), J2 (W104), and J3 (W103) from Host Module.
- 24.3 Disconnect blue tubing from Pneumatic Manifold (provides clearance to remove Host module - see Figure 3-15).
- 24.4 Remove antenna by unscrewing plastic nut (provides clearance to remove Host module).
- 24.5 Loosen two 2.5 mm captive screws securing Host Module to chassis (see Figure 3-19).
- 24.6 Pull Host Module forward while repositioning pneumatic tubing and cables to provide clearance for module removal. Remove Host Module from console.
REPLACEMENT: Carefully slide Host Module into console until it engages connector and is properly seated in place.

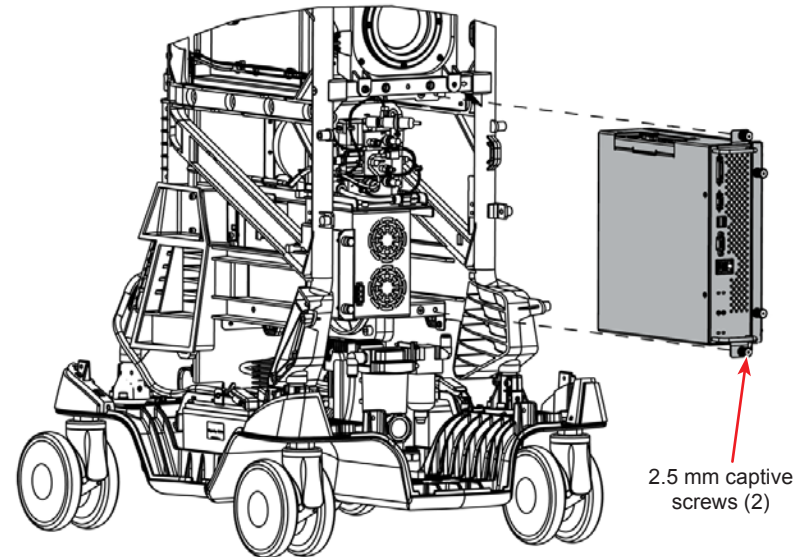


Figure 3-19 Host Module Removal

25. FILTER/SUBWOOFER BOX (215-1796-50X)

- 25.1 Remove Front Vent, Upper and Lower Front Panels.
- 25.2 Disconnect J1 from Sub-woofer.
- 25.3 Disconnect J18 and J35 from MFIO PCB.
- 25.4 Cut tie wraps securing W129-1 and W129-2 to chassis.
- 25.5 Remove four 3 mm hex screws and washer securing Sub-woofer/fan assembly to chassis (see Figure 3-20).
- 25.6 Carefully pull Filter/Subwoofer Box forward to remove from system.
- 25.7 FAN REMOVAL
 - 25.7.1 To remove fans from assembly, remove four 3 mm hex screws securing bracket to assembly.
 - 25.7.2 Remove two 3 mm hex screws securing front of fans to assembly. Cut tie wraps as necessary and remove fan(s).

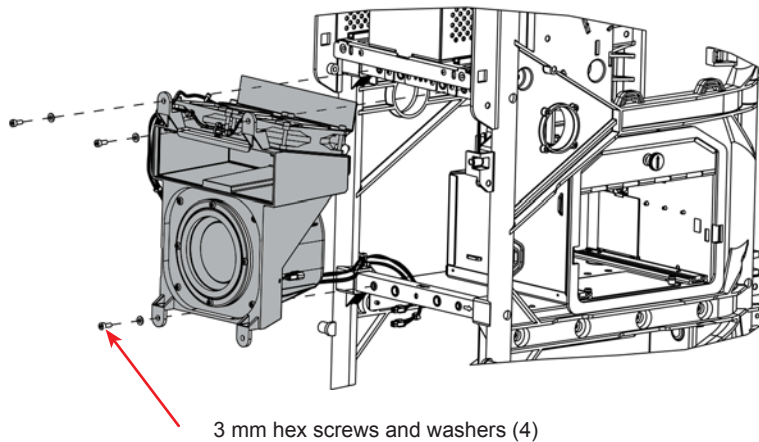


Figure 3-20 Filter/Subwoofer Box Removal

26. WIRELESS MODULE (215-2920-50X)

- 26.1 Remove Upper Rear, Lower Rear, and Upper Left Panels.
- 26.2 Remove 40 A fuse from MFIO PCB (in case hardware is dropped).
- 26.3 Disconnect J4, J5, J7, and J10 from Wireless PCB.
- 26.4 Remove 2.5 mm hex screw and star washer securing ground terminal lug to Wireless PCB.
- REPLACEMENT ORDER:* From PCB – star washer/terminal lug/hex screw
- 26.5 Remove two 3 mm hex screws securing Wireless Module to chassis (see Figure 3-21). Screws are accessed from inside chassis; removal of lower right panel may be necessary.
- 26.6 Slide Wireless Module straight back and out of console.

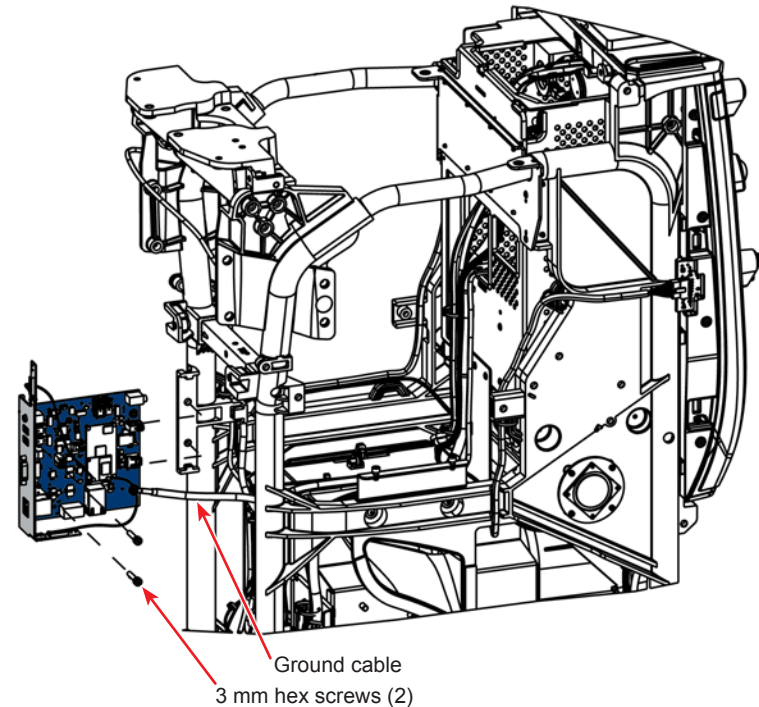


Figure 3-21 Wireless Module Removal

27. IV POLE ASSEMBLY (215-1787-50X)

- 27.1 Remove Work Surface and Display Insert Assembly.
- 27.2 Remove Upper and Lower Rear Panels.
- 27.3 Remove four 5 mm hex screws securing work surface hub at top of IV Pole Assembly to chassis. Slide hub up and remove from IV Pole Assembly (see Figure 3-22).

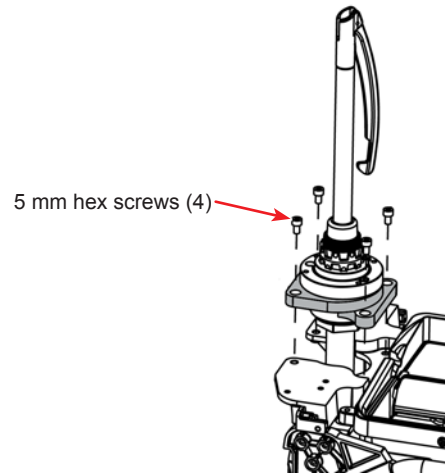


Figure 3-22 Work Surface Hub Removal

- 27.4 Remove two 3 mm hex screws securing inside top of IV Pole Assembly to chassis (see Figure 3-23).
- 27.5 Loosen two 10 mm nuts and washers securing bottom of IV Pole Assembly to standoffs on chassis. Nut do not need to be completely removed (see Figure 3-23).

REPLACEMENT: Do not tighten nuts until two 3 mm hex screws at inside top of assembly are in place.

- 27.6 Disconnect J5 and J23 from bottom of MFIO PCB.
- 27.7 Remove 3 mm hex screw securing ground terminal lug to IV Pole Assembly.
- 27.8 Lift IV Pole Assembly upward until there is enough clearance to remove assembly from console.

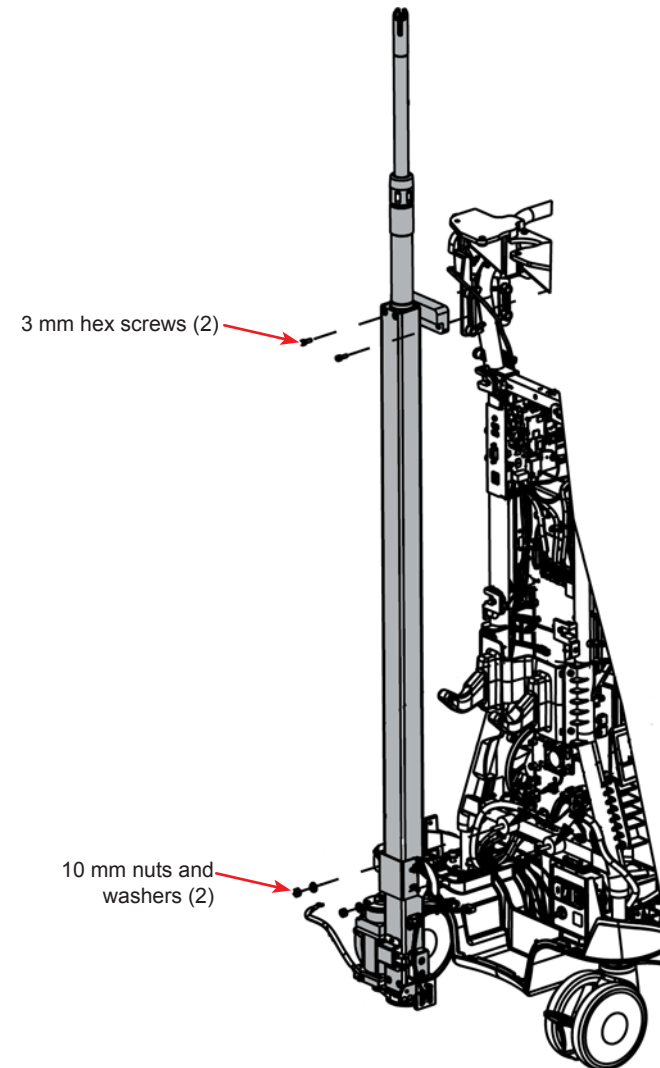


Figure 3-23 IV Pole Assembly Removal

28. FOOTSWITCH HOOK (215-1533-00X)

- 28.1 Remove Upper and Lower Rear Panels.
- 28.2 Remove four 3 mm hex screws securing footswitch hanger to chassis (see Figure 3-24).
- 28.3 Slide Footswitch Hook up to provide clearance then rotate around IV Pole and remove from console.

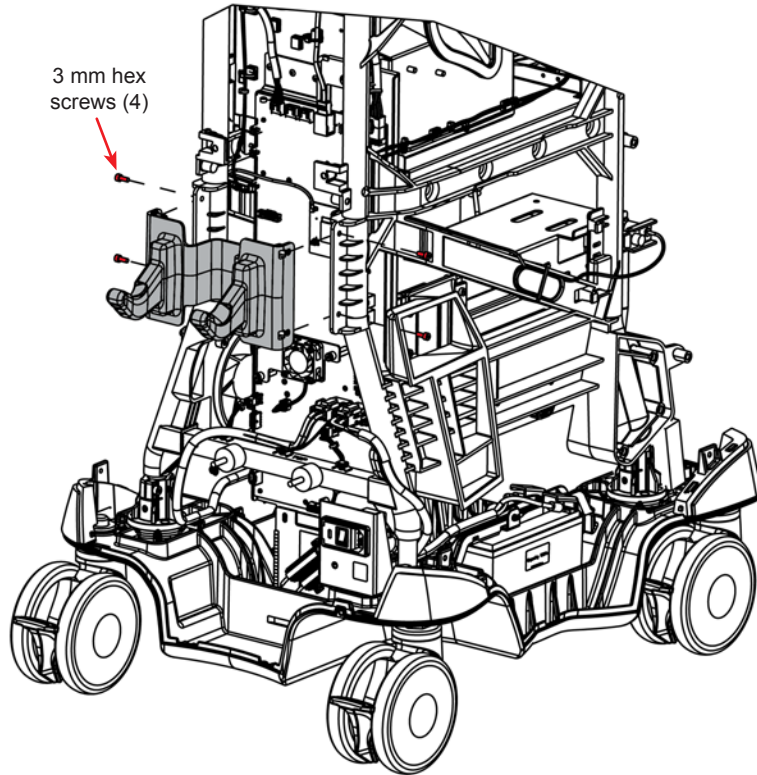


Figure 3-24 Footswitch Hook Removal (shown with IV Pole removed)

29. MFIO MODEM (215-2438-55X)

- 29.1 Remove Upper and Lower Rear Panels.
- 29.2 Remove Footswitch Hook.
- 29.3 Remove 40 A fuse from MFIO PCB (see Figure 3-25).

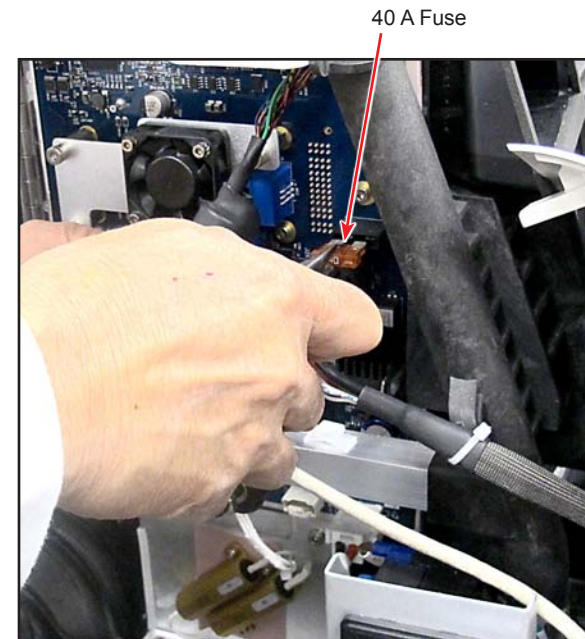


Figure 3-25 40 A fuse on MFIO PCB

- 29.4 Disconnect modem connectors J1 and J4.
- 29.5 Carefully remove two standard screws securing Modem PCB to MFIO PCB (see Figure 3-26).
- 29.6 Pull Modem PCB off two connectors on MFIO PCB and remove from console.

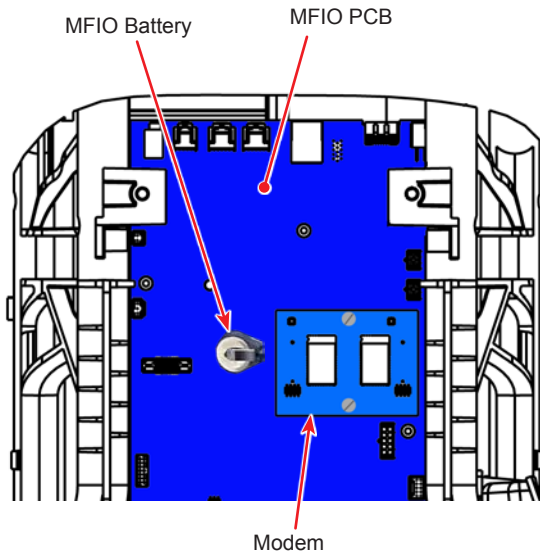


Figure 3-26 MFIO Modem Removal

30. MFIO PCB BATTERY

- 30.1 Remove Upper and Lower Rear Panels.
- 30.2 Remove Footswitch Hook.
- 30.3 Remove 40 A fuse from MFIO PCB (see Figure 3-25).
- 30.4 Remove battery BT1 (CR 2032) from MFIO PCB by pulling clip away from battery, then sliding the battery forward. See Figure 3-26 for battery location.

31. MFIO PCB (215-1353-55X)

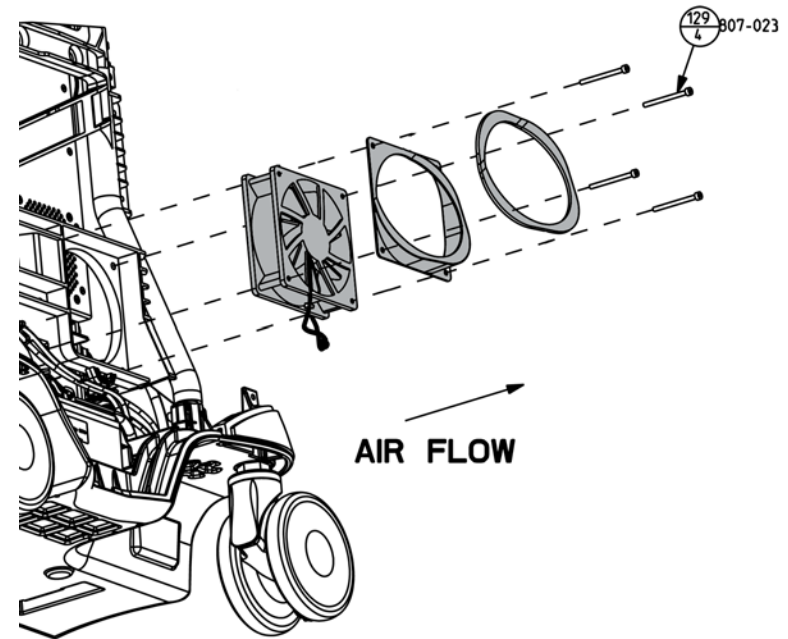
- 31.1 Remove Work Surface and Display Insert Assembly.
- 31.2 Remove Upper and Lower Rear Panels.
- 31.3 Remove IV Pole Assembly.
- 31.4 Remove Footswitch Hook.
- 31.5 Remove 40 A fuse from MFIO PCB.
- 31.6 Disconnect the connectors shown in yellow in Figure 3-27.
- 31.7 Disconnect antenna cables at J1 and J4 from MFIO Modem PCB.
- 31.8 Disconnect Fan connector J38 from MFIO PCB.
- 31.9 Loosen three 3 mm captive hex screws securing Fan assembly to MFIO PCB. Remove fan assembly.
- 31.10 Remove three Fan assembly standoffs from MFIO PCB.
- 31.11 Remove seven 3 mm hex screws securing MFIO PCB to chassis.
- 31.12 Reposition MFIO PCB as necessary to remove from system.

REPLACEMENT: Ensure that PCB is properly seated on all guide pins and all screw holes are aligned before securing with screws.

CAUTION

When a new MFIO PCB is installed, ensure that the 40 A fuse is removed prior to installation.

- 32.1 Remove Upper and Lower Rear Panels.
- 32.2 Remove Upper and Lower Left Panels.
- 32.3 Remove four 3 mm hex screws securing fan and duct to chassis (see Figure 3-28). **NOTE: Fan is still connected to MFIO PCB by cable.**
- 32.4 Pull fan from console and disconnect from J17 on MFIO PCB.



FOR REFERENCE ONLY

33. FOOTSWITCH CHARGER PCB (215-2008-55X)

- 33.1 Remove Upper and Lower Rear Panel.
- 33.2 Disconnect J1 and J2 from Footswitch Charger PCB.
- 33.3 Remove 7 mm nut and star washer securing cable clamp for W147 to panel.
- 33.4 Remove four 3 mm hex screws and black retainers securing Footswitch Charger PCB to panel.

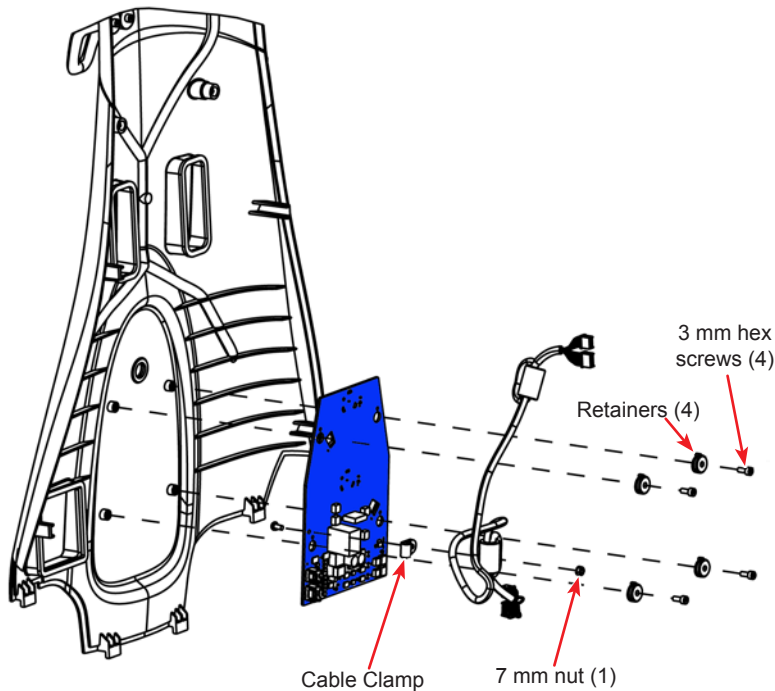


Figure 3-29 Footswitch Charger PCB Removal

34. DISPLAY ASSEMBLY (215-2849-00X)

- 34.1 Remove Display Wrap Handle and Display Bucket.
- 34.2 Cut three tie wraps securing cables W104, W103, and W126 to Display Assembly (see Figure 3-30).

REPLACEMENT: Note cable routing as shown in Figure 3-30.

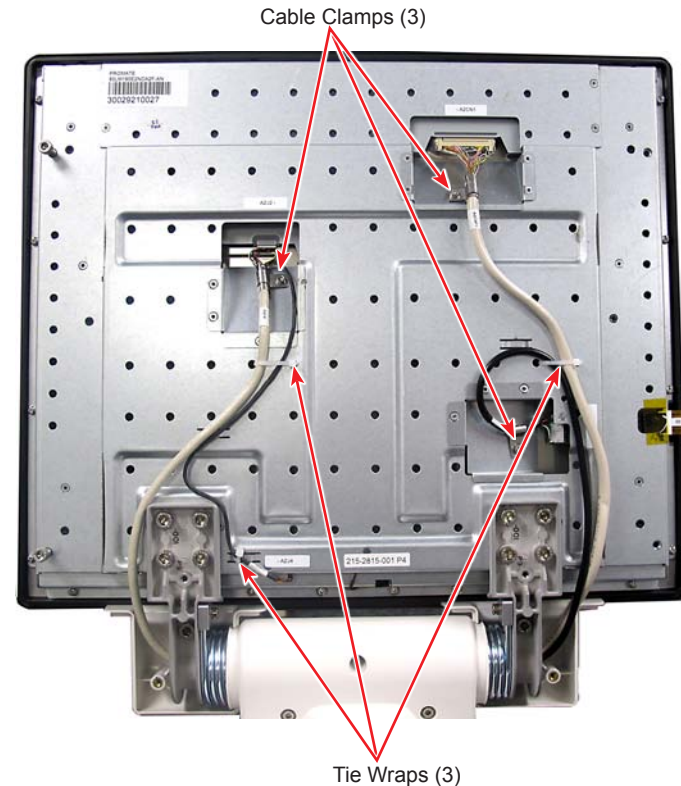


Figure 3-30 Display Cable Routing

- 34.3 Remove three 2.5 mm hex screws securing cable clamps to Display Assembly.
- 34.4 Carefully disconnect CNP1 (squeeze latch on each side to release), P2, P4, and P1 from Display Assembly. **NOTE: A thin blade screwdriver will aid in loosening connector as shown in Figure 3-31.**

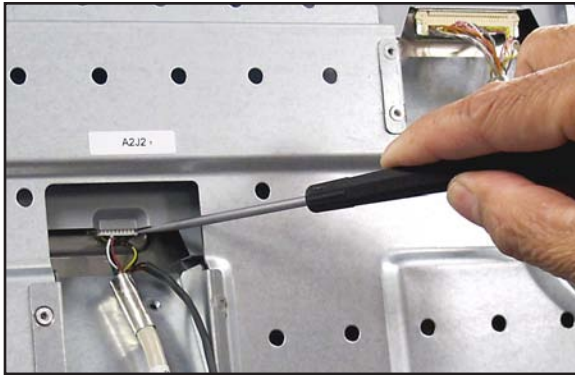


Figure 3-31 Display Connector Removal

- 34.5 Place Display in the stored position with a piece of the foam packaging from new Display under the old Display as shown in Figure 3-32.



Figure 3-32 Display Supported by Foam Packaging

- 34.6 Remove eight 5 mm hex screws securing Display Assembly to console (see Figure 3-33). **NOTE: Hinge covers will come off when display is removed.**

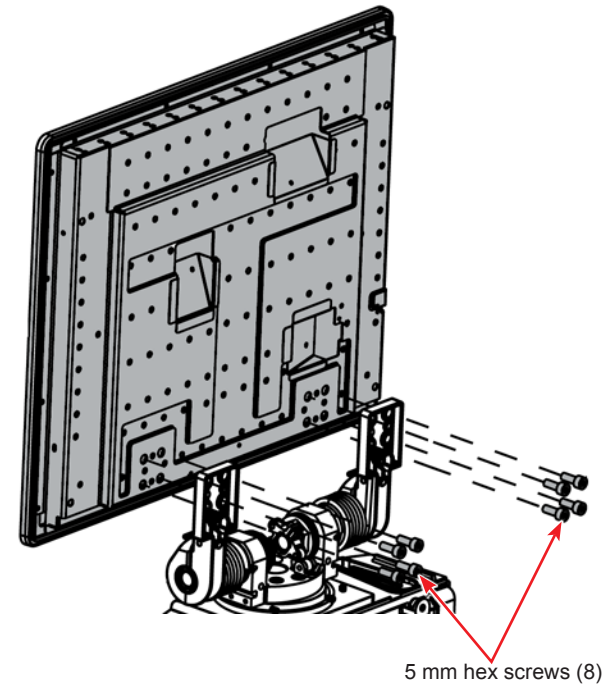


Figure 3-33 Display Removal

DISPLAY REPLACEMENT NOTES:

- Install eight 5 mm screws but do not tighten until hinge covers are in position as shown in Figure 3-34.
- Alternately tighten eight 5 mm screws securing Display to hinge.

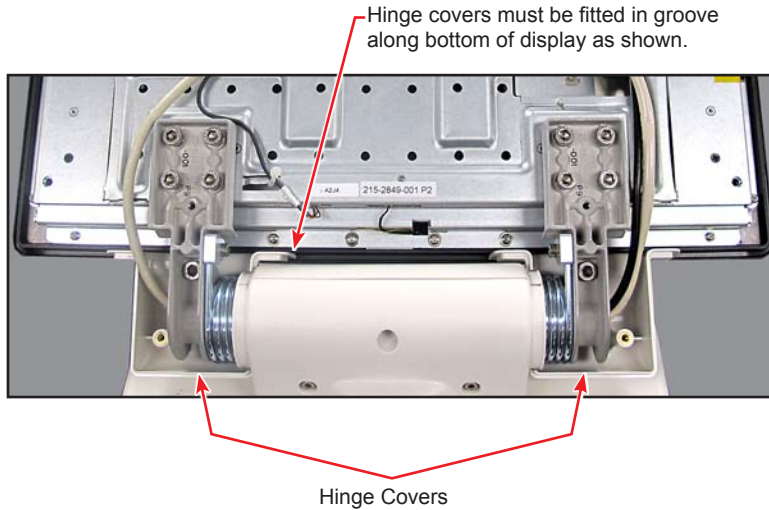


Figure 3-34 Display Hinge Cover Placement

35. BATTERIES (LEFT AND RIGHT)

- 35.1 Remove Upper and Lower Rear Panels.
- 35.2 Remove Front Vent, Upper and Lower Front Panels.
- 35.3 Remove Upper and Lower Left Panels.
- 35.4 Remove Upper and Lower Right Panels.
- 35.5 Remove orange 40 A fuse from MFIO PCB.
- 35.6 Disconnect cables from battery (see Figure 3-35).

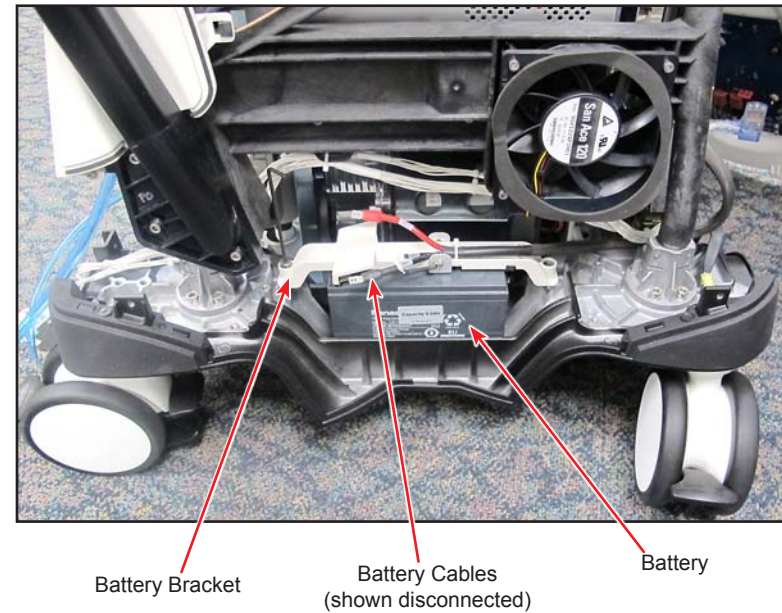


Figure 3-35 Battery Removal

- 35.7 Remove two 3 mm captive screws securing bracket to chassis.
- 35.8 Move bracket as necessary to gain clearance and remove battery from console.

REPLACEMENT: Batteries must be replaced as a set.

36. PNEUMATIC PUMP ASSEMBLY (215-1027-50X)

- 36.1 Remove Upper and Lower Rear Panels.
- 36.2 Remove Front Vent, Upper and Lower Front Panels.
- 36.3 Remove Upper and Lower Left Panels.
- 36.4 Remove Upper and Lower Right Panels.
- 36.5 Remove Front Bumper.
- 36.6 Remove Front Foot Handle Panel.
- 36.7 Disconnect blue pneumatic tubing from Pneumatic Manifold (see Figure 3-36).

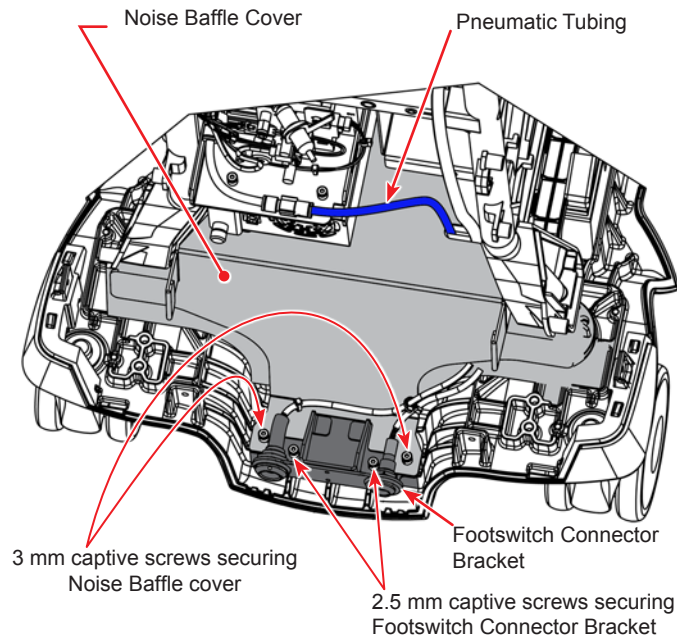


Figure 3-36 Noise Baffle Cover Removal

- 36.8 Loosen two 2.5 mm captive screws securing footswitch connector bracket to chassis.
- 36.9 Loosen two 3 mm captive screws securing Noise Baffle cover to chassis.

- 36.10 Carefully pull Noise Baffle cover from chassis while adjusting tubing and footswitch connector bracket for clearance. Take care not to damage foam insulation attached to the underside of the Noise Baffle cover.
- 36.11 Remove one 2.5 mm hex screw securing Cassette Drain to chassis (see Figure 3-37). Reposition Cassette Drain to provide clearance for pump removal.

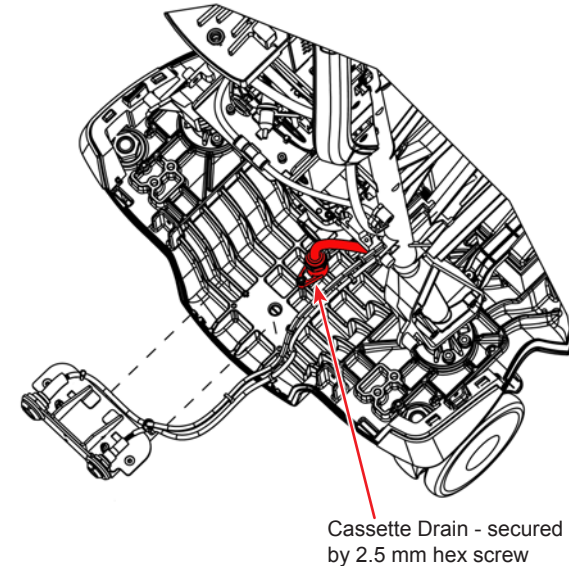


Figure 3-37 Cassette Drain Removal

- 36.12 Remove both batteries per step 35.
- 36.13 Disconnect Pump Power connection at J4 on MFIO PCB.
- 36.14 Loosen four 3 mm captive screws securing pump to chassis (see Figure 3-38).
- 36.15 Reposition pump as necessary and remove from front of console.

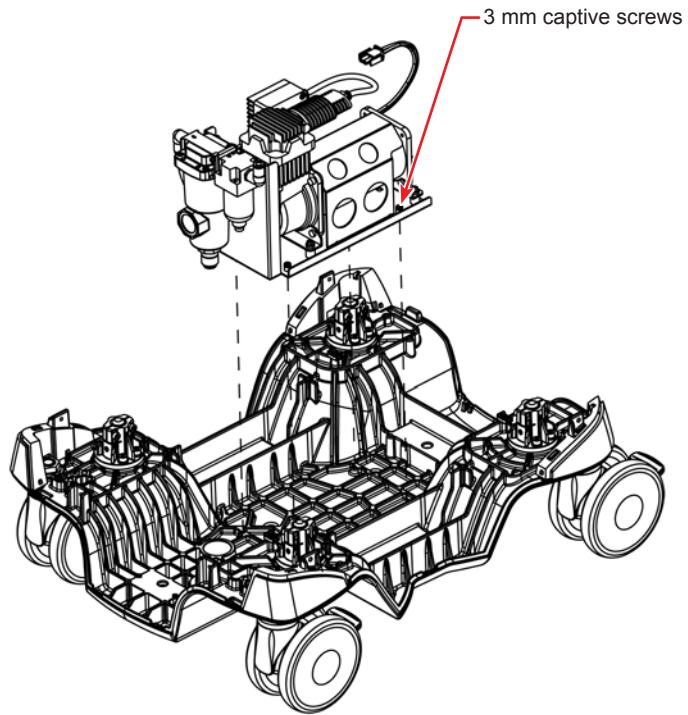


Figure 3-38 **Pneumatic Pump Removal**

37. STANDBY SWITCH (215-2286-50X)

- 37.1 Remove Upper Left Panel.
- 37.2 Disconnect J1 from Standby Switch PCB.
- 37.3 Remove three 3 mm hex screws securing PCB to panel (see Figure 3-39).

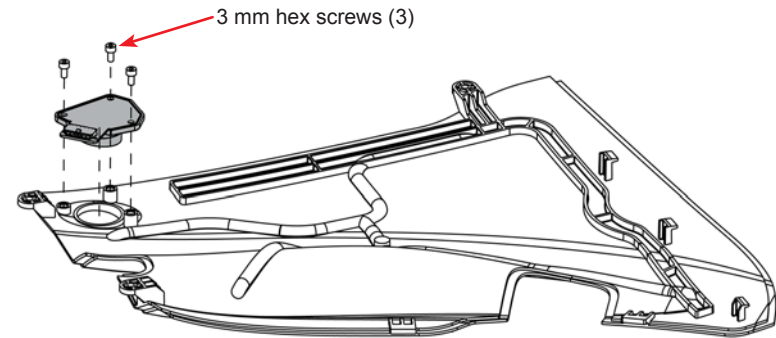


Figure 3-39 **Standby Switch Removal**

- 37.4 Remove Standby Switch from panel.

38. RUBBER BUMPERS

- 38.1 Remove panels listed in table below to gain access to bumper to be replaced. Refer to Figure 3-40 for Bumper location.

Table 3-3 Panel Removal for Rubber Bumper/Caster Access

Bumper/Caster	Panels Removed for Access	
Left Rear	Upper Rear Panel Lower Rear Panel	Upper Left Panel Lower Left Panel
Left Front	Upper Rear Panel Lower Rear Panel Front Vent Panel Upper Front Panel	Lower Front Panel Upper Left Panel Lower Left Panel
Right Rear	Upper Rear Panel Lower Rear Panel	Upper Right Panel Lower Right Panel
Right Front	Upper Rear Panel Lower Rear Panel Front Vent Panel Upper Front Panel	Lower Front Panel Upper Right Panel Lower Right Panel

- 38.2 Pull bumper off tab at each side and remove from chassis.

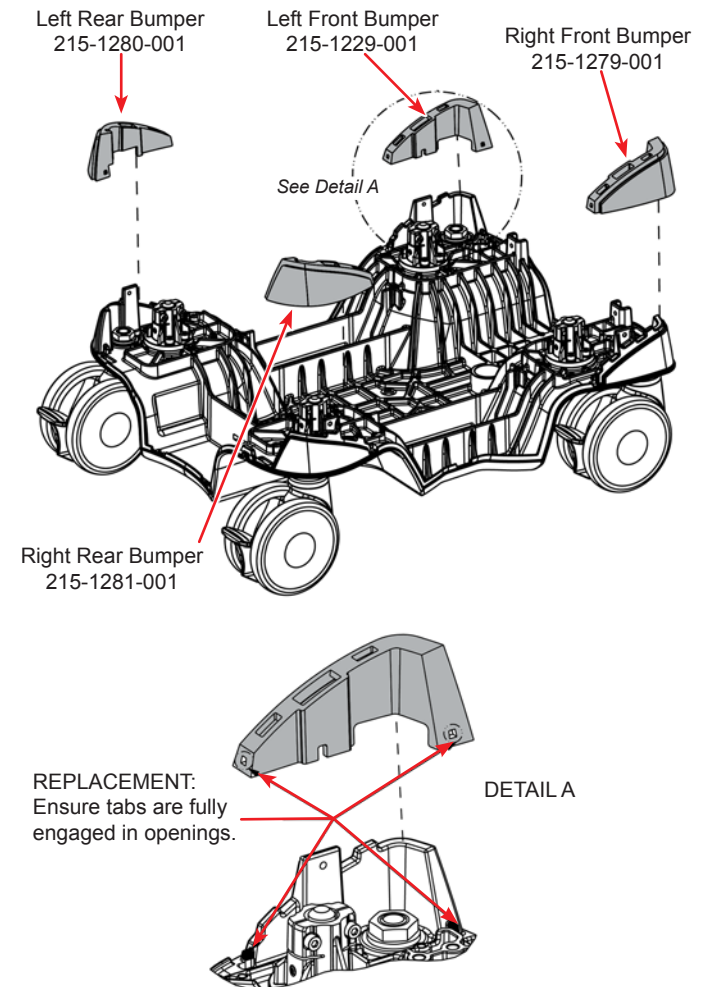


Figure 3-40 Rubber Bumper Removal

39. CASTERS (215-1792-00X)

- 39.1 Remove panels as necessary per Table 3-3 to gain access.
- 39.2 Lock casters opposite the caster to be removed.
- 39.3 Lift side with caster to be removed. and place a solid object under the chassis so that there is enough clearance above floor to remove the caster.
- 39.4 While holding the 27 mm locknut in place, remove the 24 mm nut and washer using a deep 24 mm socket wrench (see Figure 3-41).

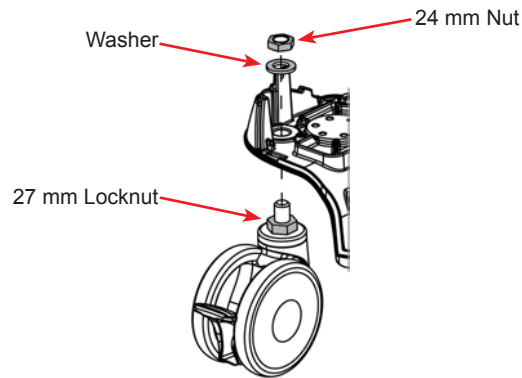


Figure 3-41 Caster Removal

- 39.5 Remove caster from console.

40. PEL ASSEMBLIES (215-1457-50X (RIGHT); 215-1458-50X (LEFT))

- 40.1 Remove front and upper side panels (left or right as necessary for PEL Assembly to be replaced).
- 40.2 Disconnect cable from PEL PCB.
- 40.3 Remove four 3 mm hex screws and washers securing PEL Assembly to chassis (see Figure 3-42).

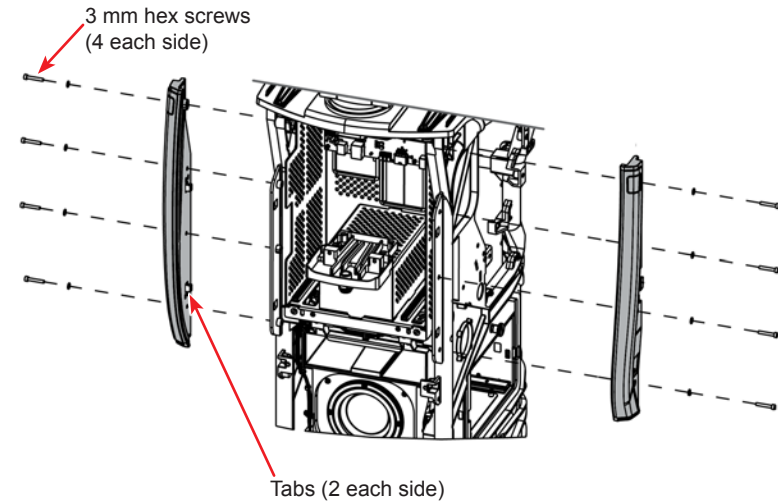


Figure 3-42 PEL Assembly Removal

- 40.4 While holding the Display Insert Panel up for clearance, push PEL Assembly forward until it releases from tabs holding it to chassis.

41. SIDE SPEAKERS (215-1110-00X)

- 41.1 Remove upper and lower rear panels, and upper and lower side panels (left or right as appropriate for speaker to be removed)Si.
- 41.2 Remove four 2 mm hex screws securing speaker/cable assembly to chassis (see Figure 3-43).

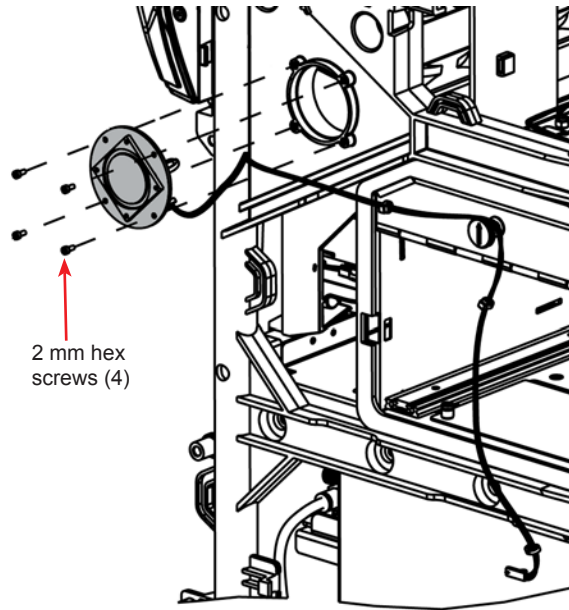


Figure 3-43 Side Speaker Removal

- 41.3 Disconnect connector from J28 (left) or J29 (right) on MFIO PCB.
- 41.4 Cut tie wraps as necessary and remove speaker/cable assembly from console.

FOOTSWITCH DISASSEMBLY

42. FOOTSWITCH BATTERY (215-2064-00X)

- 42.1 Remove seven 4 mm hex screws securing Base to main housing (see Figure 3-44). Remove Base.

REPLACEMENT: Start all screws before tightening.

- 42.2 Disconnect Battery from J2 on Footswitch PCB. Remove Battery.

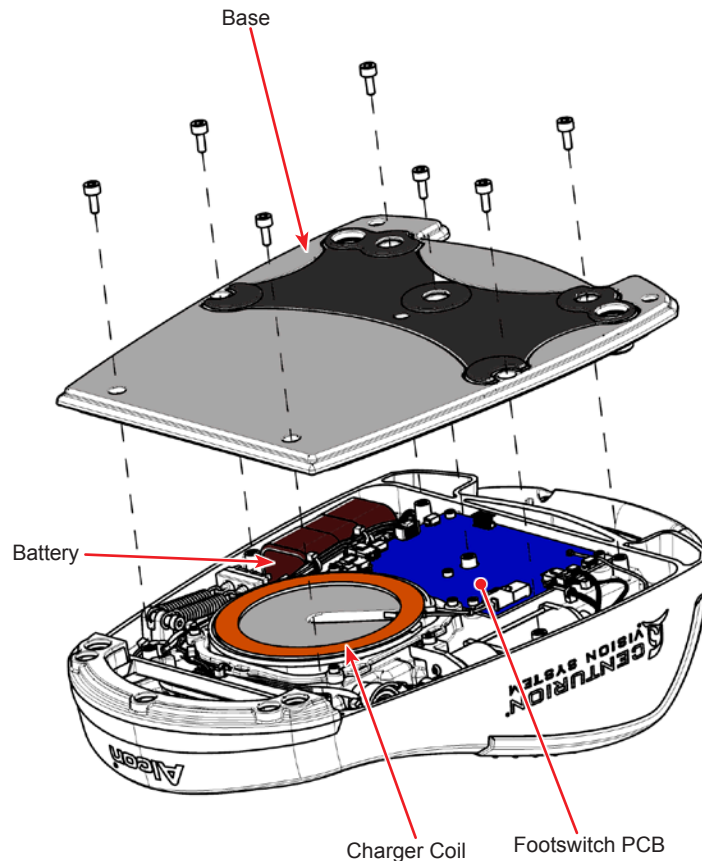


Figure 3-44 Footswitch Base Removal

43. FOOTSWITCH CHARGER COIL (215-2983-00X)

- 43.1 Remove seven 4 mm hex screws securing Base to main housing (see Figure 3-44). Remove Base.

REPLACEMENT: Start all screws before tightening.

- 43.2 Disconnect Charger Coil from J18 on Footswitch PCB. Remove Charger Coil.

44. FOOTSWITCH WING COVERS (LEFT: 215-3237-00X; RIGHT: 215-3236-00X)

- 44.1 Remove seven 4 mm hex screws securing Base to main housing (see Figure 3-44). Remove Base.

REPLACEMENT: Start all screws before tightening.

- 44.2 Remove Battery and Charger Coil as directed in previous steps. These items are not secured to the footswitch (connected to PCB) and will fall out when footswitch is turned over.
- 44.3 From underside of footswitch, remove one 2.5 mm hex screws securing Cover to main housing (see Figure 3-45).
- 44.4 Turn footswitch over and remove three 2.5 mm hex screws securing Cover to main housing.
- 44.5 Remove Cover from footswitch, repositioning as necessary to slide it forward until it clears the footpedal. If removing the Right Cover, feed the connector plug assembly through the hold in the Cover prior to sliding it along the footpedal.

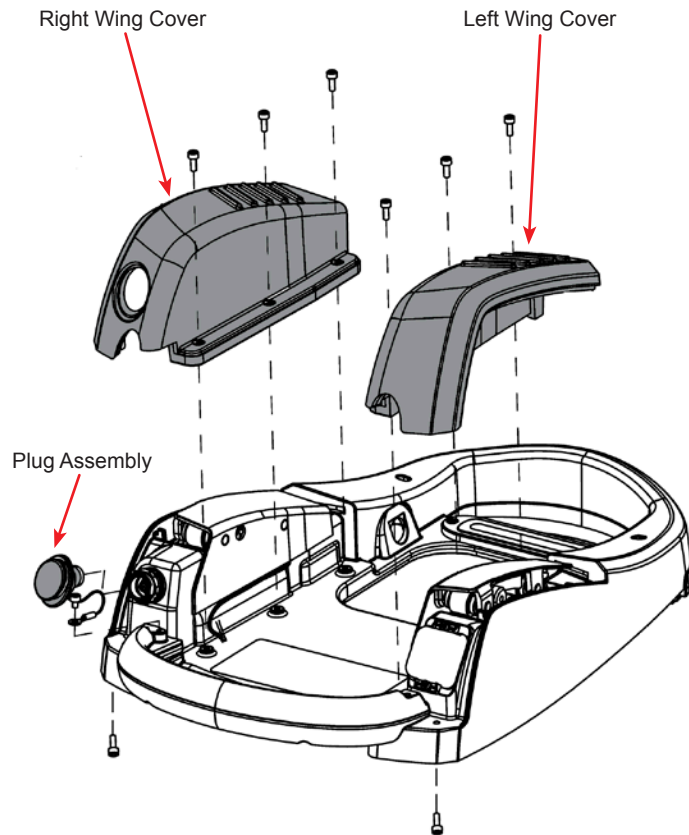


Figure 3-45 Footswitch Wing Covers and Connector Plug Assembly (shown without footpedal)

45. FOOTSWITCH PLUG ASSEMBLY (215-1016-50X)

- 45.1 Remove seven 4 mm hex screws securing Base to main housing (see Figure 3-44). Remove Base.

REPLACEMENT: Start all screws before tightening.

- 45.2 Remove Battery and Charger Coil as directed in previous steps. These items are not secured to the footswitch (connected to PCB) and will fall out when footswitch is turned over.

- 45.3 Remove Right Wing Cover per step 44.

- 45.4 Note position of lanyard, then remove 2.5 mm hex screw securing Plug Assembly to chassis. Remove Plug assembly.

46. FOOTSWITCH PCB (215-1454-55X)

- 46.1 Remove seven 4 mm hex screws securing Base to main housing (see Figure 3-44). Remove Base.

REPLACEMENT: Start all screws before tightening.

- 46.2 Disconnect connectors from PCB at:

- J2 -> W264 to Battery
- J5 -> W260_1 & _2 to Left Switch
- J6 -> W260_3 & _4 to Right Switch
- J11 -> W266 to UP SWITCH PCB, LED PCB's
- J12 -> W265 to Encoder
- J13 -> W203 to Motor
- J14 & J20 -> W267 to Console Connector
- J18 -> W233 to Charger Coil
- J21 -> W268 to Antenna

- 46.3 Remove five 2.5 mm hex screws securing Footswitch PCB to housing.

REPLACEMENT: Start all screws before tightening.

- 46.4 Remove Footswitch PCB from housing.

SECTION FOUR - MAINTENANCE AND TROUBLESHOOTING

GENERAL INFORMATION

This section of the manual contains information to assist the Field Engineer in maintenance, troubleshooting, and repair of the *Centurion®* Vision System. Refer to the list on the right for quick reference to the contents of this section.

CAUTION

The *Centurion®* Vision System contains electrostatic discharge (ESD) sensitive devices. Always wear a wrist strap when working with this device.

SERVICE TEST PROCEDURE

Each time a field engineer works on a system it is required that system checkout is performed. The checkout is performed by following instructions written in the Service Test Procedure (STP), then returning its associated checklist to the local service support center for filing. The STP/ Data Sheet is an independent document, and can be ordered from the local service support center.

SPARE PARTS

Contact Technical Services for a list of spare parts to stock in preparation for supporting the service needs of the system.

Contents of this section:

- Service Tools and Test Supplies
- Backup and Restore of Doctor Settings
- Fuse Replacement
- Disable of Network Wi-Fi (not Footswitch wireless)
- Cleaning the System Air Filters
- System Messages
- Troubleshooting of Observable Conditions
- Event Codes

Table 4-1 Service Tools and Test Supplies

Description	Part Number	Qty
Screwdriver set	--	1
Metric Hex Wrench set (1.5mm thru 6mm)	--	1 set
T-Handle Hex Wrenches (2mm, 2.5mm, 3mm, 4mm)	--	1
Nut driver 7mm, 8mm	--	1
Deep Socket 24mm (for casters)	--	1
27mm Open-End Wrench (for casters)	--	1
Hemostats	--	1
Special Tools		
USB 2.0 Flash Drive	215-3025-001	2
Syringe, 60 cc	--	1
14 gauge blunt needle for syringe	--	2
Test Supplies		
Active FMS Pack, 0.9 mm Tipless. (wet & dry)	8065752181	2+
Centurion Irrigation Bag	0007950185	2+
NOTE: The "--" entry in the Part Number column indicates that the item should be purchased locally.		

1. BACKUP AND RESTORE OF DOCTOR SETTINGS

1.1 Backup of Doctor Settings

- 1.1.1 Plug a USB media into one of the rear I/O USB ports.
- 1.1.2 Select Backup/Restore from the Custom Menu. The Backup tab is the default as shown in Figure 4-1.
- 1.1.3 To backup an individual doctor: select *Doctor*, then press *Backup Doctor*.
- 1.1.4 To backup all Doctors: press *Backup All Doctors*.



Figure 4-1 Backup/Restore Dialog Screen - Backup Tab

1.2 Restoring the Doctor Settings

- 1.2.1 Plug the USB media containing the Doctors Settings into one of the rear I/O USB ports.
- 1.2.2 Select Backup/Restore from the Custom Menu. The Backup tab is the default as shown in Figure 4-1.
- 1.2.3 Press the Restore Tab (see Figure 4-2).
- 1.2.4 To Restore an individual doctor:
 - 1.2.4.1 Press Doctors in the Sort By section.
 - 1.2.4.2 Press the Plus sign (+) next to the doctor's name.

- 1.2.4.3 Select the date of the files to restore.
 - 1.2.4.4 Press the Restore Doctor button.
 - 1.2.4.5 Resolve any conflict by selecting Overwrite, Skip, or Save As.
- 1.2.5 To restore all Doctors:
- 1.2.5.1 Press Date in the Sort By section.
 - 1.2.5.2 Select the date to restore.
 - 1.2.5.3 Press the Restore All Doctors button.
 - 1.2.5.4 Resolve any conflict by selecting Overwrite, Overwrite All, Skip, Skip All or Save As.



Figure 4-2 Backup/Restore Dialog Screen - Restore Tab

2. FUSE REPLACEMENT

- 2.1 Turn the primary AC power switch OFF. It is located at the bottom of the rear panel on the power module. Unplug power cord from power module.
- 2.2 Insert a flat surfaced instrument along the left side of the power module fuse door. Pressing the flat instrument to the right against the fuse door, pull out to release door.

CAUTION

The fuse door must be pressed gently to ensure it does not break.

- 2.3 With fuse door open, grasp the fuse holder and pull it out from the power module.
- 2.4 Gently remove and replace fuses. Contact Alcon Technical Services for the correct rating and size.
- 2.5 Reinsert fuse holder into power module and shut the fuse door.
- 2.6 Plug power cord into power source.

3. DISABLE OF NETWORK WI-FI (not footswitch wireless)

3.1 Software Disable:

- 3.1.1 From the Setup Status Menu, press the Custom button located on the right side of the screen.
- 3.1.2 Select System Settings then press the Wireless tab.
- 3.1.3 In the Wi-Fi Network field, press the Off button.

NOTE: Software Disable does not turn off the Wi-Fi beacon at start up. To disable the board completely continue to the next step.

3.2 Hardware Disable:

- 3.2.1 Remove Upper and Lower Rear Panels (see Section 3 for detailed instructions).
- 3.2.2 On Wireless Module-Rear IO PCB, move switch S2 into the off position to disable network wireless activity (see Figure 4-3 for switch location). **NOTE: LED DS3 illuminates green when Wi-Fi is on, and is not illuminated when Wi-Fi is off.**
- 3.2.3 Replace Upper and Lower Rear Panels.

Switch S2 - Wireless Network ON/OFF Switch

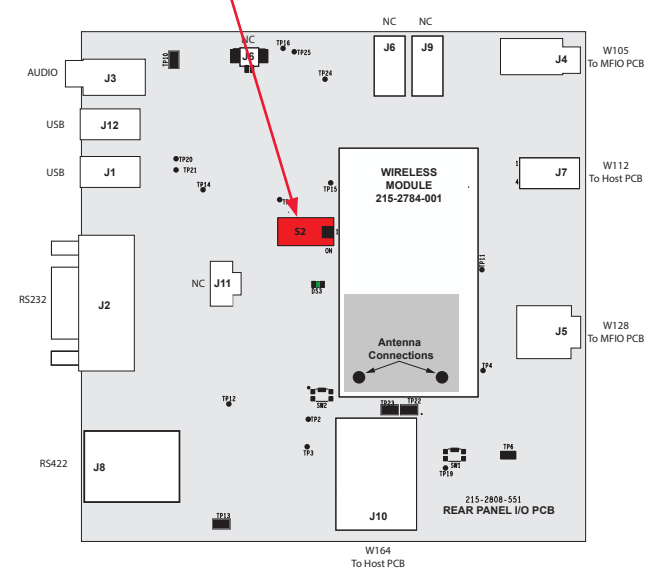


Figure 4-3 Wireless Network ON/OFF Switch

4. CLEANING THE SYSTEM AIR FILTERS

- 4.1 Remove the Lower Front Panel per Section Three of this manual.
- 4.2 Loosen four 3 mm captive screws securing the Front Retainer to the panel (see Figure 4-4). Remove Front Retainer and filter.

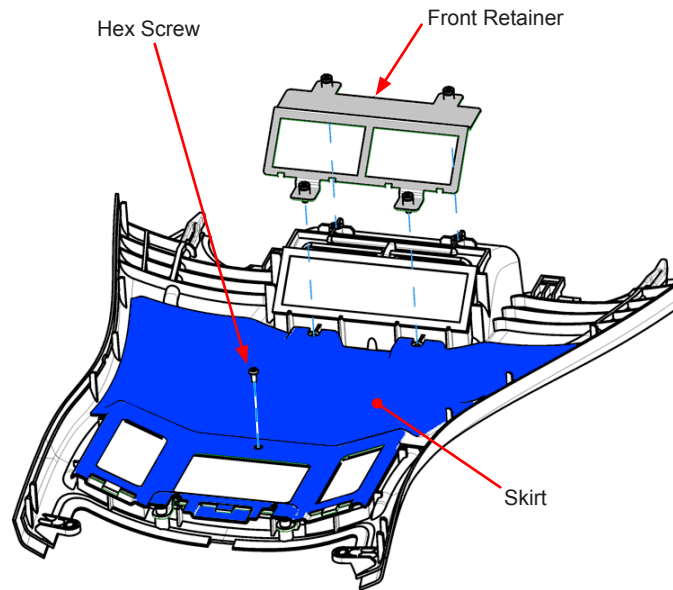


Figure 4-4 Lower Front Panel - Front Retainer and Skirt Removal

- 4.3 Remove 2.5 mm hex screw securing Skirt to Panel. Remove Skirt from Panel.
- 4.4 Loosen four 3 mm captive screws securing Filter Bracket to panel (see Figure 4-5). Remove Filter Bracket and three filters.

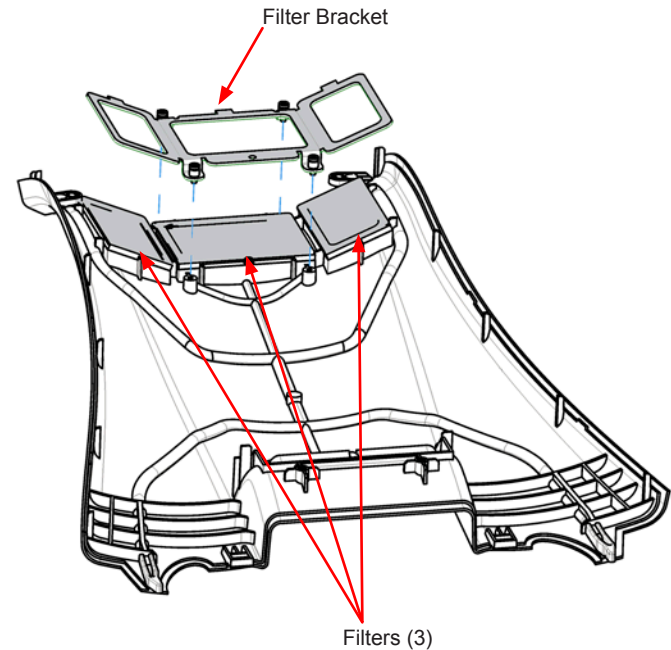


Figure 4-5 Lower Front Panel - Filter Bracket and Filter Removal

- 4.5 Clean four filters with water then shake dry.
- 4.6 Reassemble Front Panel assembly by performing this procedure in reverse order.

CAUTION

Filters are marked with an air flow direction arrow. Ensure that filters are positioned for air flowing into the system.

SYSTEM MESSAGES

The system communicates through the display of system messages—Advisories, Warnings, and Faults—based on the severity of the event. Figure 4-6 shows an example of each.

Advisories

An Advisory is a message to the user. The Advisory may require user intervention, or it may be for information purposes only. When an advisory condition is detected, the following occurs:

- A tone is generated.
- A dialog is displayed indicating the Advisory.

Warnings

Warnings are generated to indicate a non-system fault that is isolated and does not affect the whole system. When a Warning is detected, the following occurs:

- A tone is generated.
- A dialog is displayed indicating the Warning.

- Affected mechanisms are placed in a safe state—the function of the affected mechanism is not available.
- If desired, continue with limited functionality.

System Faults

System Faults are the result of an exceptional condition resulting from an event or a hardware issue that renders the software unable to carry out a requested service, or one that results in unacceptable risk. When a System Fault is detected, the following occurs:

- A tone is generated.
- All mechanisms are disabled.
- A dialog is displayed indicating the fault. If the System Fault occurs during system initialization, shutdown, or when the touchscreen graphics software is unavailable, the fault dialog will be displayed in English.
- All requests for functions are ignored, including key activations.

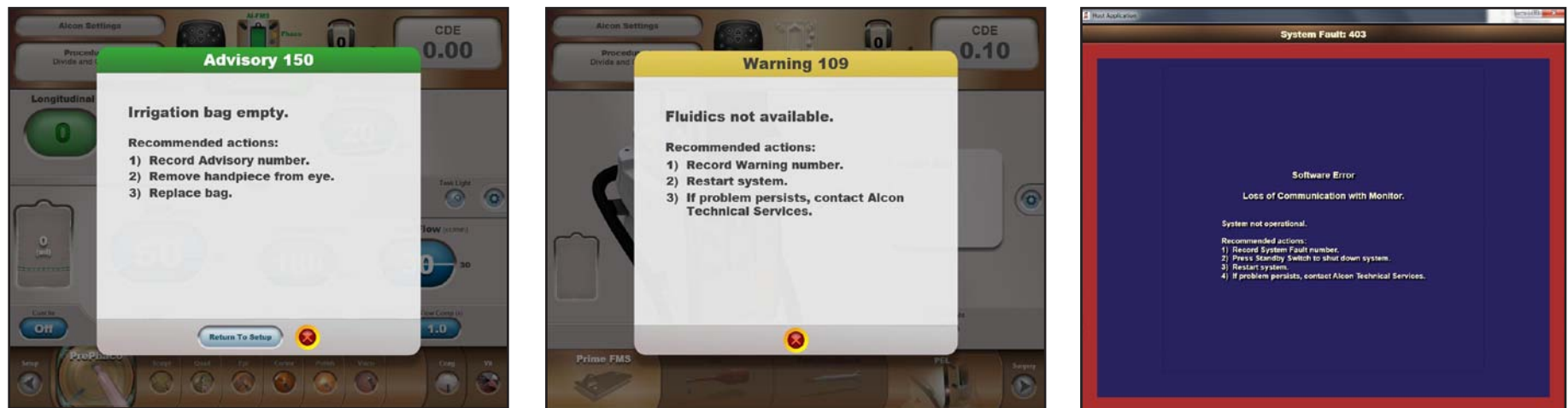


Figure 4-6 Advisory, Warning, and Fault Screen Examples

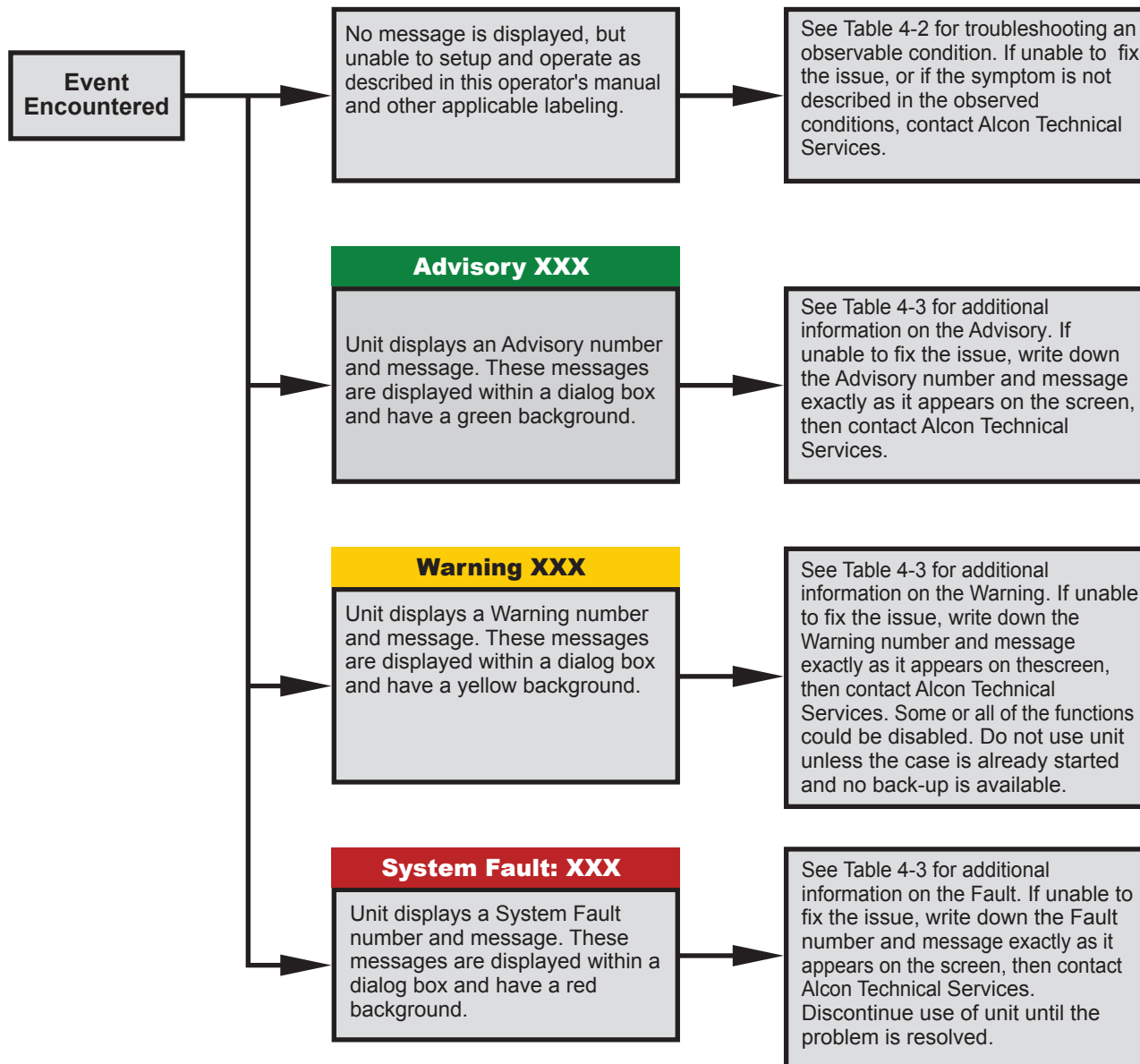


Figure 4-7 Troubleshooting Guide

Table 4-2 Troubleshooting of Observed Conditions

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
System does not power-up.	<ol style="list-style-type: none"> 1. Main power switch in OFF position. 2. Blown power fuse. 	<ol style="list-style-type: none"> 1. Turn main power switch near power cord to ON position. 2. Replace power fuse near power cord.
Gravity Fluidics - Test chamber does not fill. There is insufficient irrigation.	<ol style="list-style-type: none"> 1. Restriction to irrigation inflow. 2. Bottle too low or handpiece too high. 3. Drip chamber not adequately filled with fluid. 4. Clogged handpiece or tips. 5. Faulty FMS. 	<ol style="list-style-type: none"> 1. Check for kinks in irrigation line or twisted infusion sleeve. 2. Put bottle at 78 cm and put handpiece at patient eye level. 3. Squeeze drip chamber until 2/3 to 3/4 full. 4. Check handpiece and tips. 5. Replace FMS.
<i>Active Fluidics™</i> System - Test chamber does not fill. There is insufficient irrigation.	<ol style="list-style-type: none"> 1. Restriction to irrigation inflow. 2. Clogged handpiece or tips. 3. FMS. 	<ol style="list-style-type: none"> 1. Check for kinks in irrigation line or twisted infusion sleeve. 2. Check handpiece and tips. 3. Replace FMS.
Gravity Fluidics - Vacuum check failure.	<ol style="list-style-type: none"> 1. Improper FMS insertion. 2. IRR and ASP fittings are not connected together securely. 3. Drip chamber not 2/3 to 3/4 full. 4. Test chamber not on handpiece, or not secured tightly onto handpiece. 5. Priming with HP attached. 6. Cracked blue luer fitting. 7. Faulty FMS. 	<ol style="list-style-type: none"> 1. Reinsert FMS. 2. Ensure both fittings are tightly connected together. 3. Flush irrigation line and fill drip chamber halfway using Fill button in Setup mode. Reprime. 4. Secure test chamber tightly onto handpiece. 5. Remove HP, then connect blue and white luer fittings together. 6. Check fitting and replace FMS as necessary. 7. Replace FMS.
<i>Active Fluidics™</i> System - Vacuum check failure.	<ol style="list-style-type: none"> 1. Improper FMS insertion. 2. IRR and ASP fittings are not connected together securely. 3. Test chamber not on handpiece, or not secured tightly onto handpiece. 4. Priming with HP attached. 5. Cracked blue luer fitting. 6. Faulty FMS. 	<ol style="list-style-type: none"> 1. Reinsert FMS. 2. Ensure both fittings are tightly connected together. 3. Secure test chamber tightly onto handpiece. 4. Remove HP, then connect blue and white luer fittings together. 5. Check fitting and replace FMS as necessary. 6. Replace FMS.

Table 4-2 Troubleshooting of Observed Conditions

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Gravity Fluidics - Vent test failure or vacuum and vent check failure.	<ol style="list-style-type: none"> 1. Restriction in irrigation or aspiration lines. 2. Machine insufficiently primed. 3. Faulty FMS. 	<ol style="list-style-type: none"> 1. Check kinked irrigation or aspiration lines or twisted tip cap sleeve. 2. Press Test to reprime. 3. Reinsert FMS. Replace FMS if problem persists.
<i>Active Fluidics™</i> System - Vent test failure or vacuum and vent check failure.	<ol style="list-style-type: none"> 1. Restriction in irrigation or aspiration lines. 2. Machine insufficiently primed. 3. Faulty FMS. 	<ol style="list-style-type: none"> 1. Check kinked irrigation or aspiration lines or twisted tip cap sleeve. 2. Press Test to reprime. 3. Reinsert FMS. Replace FMS if problem persists.
Prime Complete / Test Handpiece Failed.	<ol style="list-style-type: none"> 1. Faulty tip. 2. Faulty handpiece connector. 3. Bad connector port. 4. Faulty handpiece. 5. Other. 	<ol style="list-style-type: none"> 1. Remove tip and replace if faulty. Retighten. Retest. 2. Unplug, reinsert into port, retest. 3. Connect handpiece to other port and retune. 4. Replace handpiece. Retest. 5. Record the failed code number and contact Alcon Technical Services Department.
Test Handpiece Failed: Loose Tip	<ol style="list-style-type: none"> 1. Loose tip. 2. Bad tip. 3. Bad connector port. 	<ol style="list-style-type: none"> 1. Tighten tip and retune. 2. Replace tip and retune. 3. Connect handpiece to other port and retune.
Test Handpiece Failed: Tuning in Air.	Attempted to tune tips in presence of air.	Fill test chamber completely. Retune.
Gravity Fluidics - Test chamber collapses after tuning completed—does not refill.	<ol style="list-style-type: none"> 1. Clogged handpiece or tips. 2. Restriction to irrigation flow. 3. Wrong sleeve on tip 	<ol style="list-style-type: none"> 1. Check handpiece and tips irrigation flow. 2. Check for kinks in irrigation line or twisted infusion sleeve. 3. Check for proper sleeve and tip size.
<i>Active Fluidics™</i> System - Test chamber collapses after tuning completed—does not refill.	<ol style="list-style-type: none"> 1. Clogged handpiece or tips. 2. Restriction to irrigation flow. 3. Wrong sleeve on tip. 	<ol style="list-style-type: none"> 1. Check handpiece and tips irrigation flow. 2. Check for kinks in irrigation line or twisted infusion sleeve. 3. Check for proper sleeve and tip size.

Table 4-2 Troubleshooting of Observed Conditions

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No tune or loss of phaco power.	<ol style="list-style-type: none"> 1. Handpiece tuned while hot. 2. Loose tip. 3. Handpiece connector not seated correctly. 4. Bad connector port. 5. Faulty handpiece. 	<ol style="list-style-type: none"> 1. Retune. 2. Retighten and retune. 3. Disconnect and reinsert handpiece connector. 4. Connect handpiece to other port and retune. 5. Try alternate handpiece.
Gravity Fluidics - Air in irrigation line causing bubbles.	<ol style="list-style-type: none"> 1. Drip chamber not sufficiently full. 2. Air in line or handpiece. 3. Loose irrigation luer fitting. 4. Improper priming. 5. Bad handpiece. 	<ol style="list-style-type: none"> 1. Fill drip chamber 2/3 to 3/4 full. Flush irrigation line in Free Flow or footpedal position 1. 2. Tap handpiece 2-3X during flow test. 3. Check irrigation line and reseal. 4. Reprime per setup procedure. 5. Replace handpiece.
<i>Active Fluidics™</i> System - Air in irrigation line causing bubbles.	<ol style="list-style-type: none"> 1. Air in line or handpiece. 2. Loose irrigation luer fitting. 3. Improper priming. 4. Bad handpiece. 	<ol style="list-style-type: none"> 1. Tap handpiece 2-3X during flow test. 2. Check irrigation line and reseal. 3. Reprime per setup procedure. 4. Replace handpiece.
Irrigation does not stop.	System in Continuous Irrigation mode.	Turn Continuous Irrigation off.
Low irrigation flow.	Irrigation sleeve too distal.	Move sleeve so holes are proximal to tip flare.
Backflow regurgitation.	Machine insufficiently primed.	Reprime.
Insufficient aspiration.	<ol style="list-style-type: none"> 1. Loose blue luer fittings. 2. Damaged O-ring (<i>Ultraflow®</i> I/A handpiece only). 3. Clogged tip. 4. Kinked or damaged tubing. 5. Cracked blue luer fitting. 	<ol style="list-style-type: none"> 1. Reconnect securely. 2. Inspect O-ring and replace, as necessary. 3. • Flush tip with sterile water or BSS® sterile irrigating solution. Retest. • Replace tip. Retest. 4. Check tubing and/or replace FMS. 5. Check fitting and/or replace FMS.

Table 4-2 Troubleshooting of Observed Conditions

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
<i>Ultraflow</i> ™ I/A handpiece leaking at tip and handpiece connection.	<ol style="list-style-type: none"> 1. Loose tip. 2. Damaged O-ring. 3. Leak in tubing. 	<ol style="list-style-type: none"> 1. Retighten tip. 2. Retest. Inspect O-rings and replace, as necessary. To replace: <ul style="list-style-type: none"> • Using the special O-ring tool, remove damaged O-ring. • Roll new O-ring off tool and roll it into place on tip. 3. Replace tubing.
"Calibration failed. Vitrectomy cut rate will be limited to 800 cpm" Advisory is displayed at power up.	Internal pneumatics valve calibration has failed.	Continue vitrectomy procedure with limited cut rate and contact Alcon Technical Services Department.
Ineffective or poor Vit cutting.	<ol style="list-style-type: none"> 1. Port not closing fully as the inner cutter moves. 2. Kinked, damaged or loose actuation tubing. 3. Faulty probe (activated in air instead of fluid). 	<ol style="list-style-type: none"> 1. Reduce cutting speed until port closes completely. 2. Check for damaged or kinked tubing; straighten if necessary. Tighten any loose luer fittings. Replace probe if visual inspection shows any damaged components. 3. Replace probe.
Ant Vit probe does not work at all (no movement).	<ol style="list-style-type: none"> 1. An actuation line filling with BSS® fluid due to improper setup. 2. Faulty probe. 	<ol style="list-style-type: none"> 1. Check for correct tubing connections, then replace probe. 2. Replace probe.
Gravity Fluidics - IV pole does not retract completely upon shutdown.	System error.	Turn system on, wait until system powers up, then turn system off using Standby power switch located on upper rear panel.
Remote control does not work.	<ol style="list-style-type: none"> 1. Remote control and system set on different channels. 2. Batteries discharged. 	<ol style="list-style-type: none"> 1. Verify system channel selection and remote channel select are set to same channel (A, B, C, D, E, or F). 2. Replace batteries in remote control.
Cabled Footswitch - Footpedal not responding properly.	<ol style="list-style-type: none"> 1. Footpedal was pressed when system was powered up, or footpedal was pressed while plugging in footswitch. 2. Footswitch connector not seated properly. 3. Debris or BSS® solution residue under rear section of treadle. 4. Console malfunction. 5. Faulty footswitch. 	<ol style="list-style-type: none"> 1. Release footpedal and power off system. Make sure footswitch is properly connected to system, and turn power back on, with footpedal in full up position. 2. Disconnect and reconnect footswitch cable connector. 3. Clean and remove debris. 4. Disconnect and reconnect footswitch cable connector. 5. Replace footswitch.
Wireless Footswitch - Footpedal not responding properly.	<ol style="list-style-type: none"> 1. Footpedal was pressed down when system was powered up 2. Debris or BSS® solution residue under rear section of treadle. 3. Wireless communications not working properly. 4. Faulty footswitch. 	<ol style="list-style-type: none"> 1. Release footpedal and power off system. Turn power back on, with footpedal in full up position. 2. Clean and remove debris. 3. Connect footswitch to console with cable. 4. Replace footswitch.

Table 4-2 Troubleshooting of Observed Conditions

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cabled Footswitch - "Please Install Footswitch" Advisory is displayed..	1. Improperly connected or disconnected footswitch. 2. Footswitch connector not seated properly. 3. Faulty footswitch.	1. Verify proper insertion of footswitch cable connector (while footpedal/treadle is in full up position). 2. Disconnect and reconnect footswitch cable connector. 3. Replace footswitch.
Wireless Footswitch - "Please Install Footswitch" Advisory is displayed.	1. Footswitch has not been "paired" with the console.	1. Hang footswitch onto footswitch hooks on the rear of the unit for greater than 5 seconds then remove.
System Fault occurs; entire system inoperative, red screen with stop sign is displayed.	System Fault has several possible causes.	Carefully record all text appearing in Fault screen, on display. Press and hold Standby switch for a few seconds to turn system off, wait until screen goes dark, then turn system back on to see whether fault clears. Contact Technical Services..
"Doctor data invalid, U/S Occlusion, Dr. XXXX" Advisory is displayed.	User restores, or selects Doctor Name that contains U/S Occlusion settings which are no longer available.	Save data. U/S Occlusion settings will be removed.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
FLUIDICS MECHANISM – 1XX				
101	Warning	<p>Fluidics not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	<p>1) Prime, Fill and Test buttons are disabled.</p> <p>2) System goes to Not Primed status.</p> <p>3) Phaco handpieces go to Not Tested status.</p>
103	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
105	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
106	Warning	Same as previous entry.	Command range error.	Same as previous entry.
107	Warning	Same as previous entry.	Irrigation valve failed.	Same as previous entry.
108	Warning	Same as previous entry.	Irrigation valve speed failure.	Same as previous entry.
109	Warning	Same as previous entry.	Vent valve direction failure.	Same as previous entry.
110	Warning	Same as previous entry.	Vent speed failure.	Same as previous entry.
111	Warning	Same as previous entry.	Pump direction failure.	Same as previous entry.
112	Warning	Same as previous entry.	Pump speed failure.	Same as previous entry.
113	Warning	Same as previous entry.	OPS software error.	Same as previous entry.
114	Warning	Same as previous entry.	OPS laser failure.	Same as previous entry.
115	Warning	Same as previous entry.	OPS image failure.	Same as previous entry.
116	Warning	Same as previous entry.	OPS board failure.	Same as previous entry.
117	Warning	Same as previous entry.	Bag ID software failure.	Same as previous entry.
120	Warning	Same as previous entry.	FMS latch motor current failure.	Same as previous entry.
121	Warning	Same as previous entry.	Backup power failure.	Same as previous entry.
126	Warning	Same as previous entry.	Host fault	Same as previous entry.
127	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
128	Warning	Same as previous entry.	Host range error.	Same as previous entry.
129	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
130	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
131	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
135	Warning	Same as previous entry.	Tone mechanism fault.	Same as previous entry.
136	Warning	Same as previous entry.	Tone mechanism timeout.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
137	Warning	Same as previous entry.	Tone mechanism range error.	Same as previous entry.
138	Warning	Same as previous entry.	Operator Control mechanism fault.	Same as previous entry.
139	Warning	Same as previous entry.	Operator Control mechanism timeout.	Same as previous entry.
140	Warning	Same as previous entry.	Operator Control mechanism range error.	Same as previous entry.
144	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
145	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
146	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
149	Warning	Same as previous entry.	IA subsystem fault.	Same as previous entry.
150	Advisory	<p>Irrigation bag empty.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle. 2) Remove handpiece from eye. 3) Replace bag. 	<p>Bag fluid level critically low.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p> <p>Note: This advisory is displayed only in Active Irrigation Mode. It is displayed in Phaco, I/A, Vitrectomy, Fill, and Irrigation Footswitch Steps. It is displayed when the condition initially occurs and whenever any of these step types is entered, but not when transitioning between steps of the same step type.</p>	<p>1) Aspiration is disabled until the low volume condition no longer exists and the footswitch treadle has been released to FP1.</p> <p>2) A "Return to Setup Screen" Button is provided in the advisory dialog.</p> <p>3) After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0.</p> <p>4) This advisory is automatically dismissed if the FMS is removed.</p>
151	Advisory	<p>Irrigation bag empty.</p> <p>Recommended actions:</p> <p>Replace bag.</p>	<p>Bag fluid level critically low.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p> <p>Note: This advisory is only displayed in the Setup Screen in Active Irrigation Mode when the footswitch treadle is not in FP0.</p>	<p>1) After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0.</p> <p>2) This advisory is automatically dismissed if the FMS is removed.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
153	Advisory	<p>Bag bay door open.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Close door. 2) Proceed with surgery. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Remove handpiece from eye. 2) Press 'Return to Setup Screen'. 	<p>Bag bay door opened in Surgery Screen while Active Irrigation FMS is inserted.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p> <p>Note: This advisory is displayed only in Phaco, I/A, Vitrectomy, Fill, or Irrigation Footswitch Steps in Active Irrigation Mode. It is displayed when the condition initially occurs and whenever any of these step types is entered, but not when transitioning between steps of any of these step types.</p>	<ol style="list-style-type: none"> 1) Irrigation remains enabled. Aspiration, phaco, and vitrectomy are disabled while the door is open. 2) A "Return to Setup Screen" Button is provided in the advisory dialog. 3) This advisory is automatically dismissed if the door is closed. 4) This advisory is automatically dismissed if the FMS is removed. 5) After the user dismisses the advisory, it is redisplayed if the door is still open and the footswitch treadle is depressed from FP0 in a Phaco, I/A, Vitrectomy, Fill, or Irrigation Footswitch Step.
154	Advisory	<p>Bag bay door was opened.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Close bag door. <p>Repeat operation.</p>	<p>Bag bay door opened while Active Irrigation FMS is inserted and prime, fill, or tune is in progress.</p> <p>Note: This Advisory is generated only in the Setup Screen.</p>	<p>Prime, fill, or tune is canceled.</p>
155	Advisory	<p>Irrigation bag is almost empty.</p> <p>Recommended actions:</p> <p>Replace bag.</p>	<p>Bag fluid level not sufficient for current operation (prime, fill, etc.).</p>	<p>Commanded operation is not performed.</p>
156	Advisory	<p>Active Fluidics is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove FMS. 2) Use Gravity Fluidics. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Active Irrigation failed homing.</p>	<ol style="list-style-type: none"> 1) System goes to Not Primed status. 2) If the advisory occurs on FMS insertion, the FMS is rejected.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
157	Advisory	<p>Active Fluidics is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove FMS. 2) Use Gravity Fluidics. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Active Irrigation actuator failed.	<p>1) System goes to Not Primed status.</p> <p>2) After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0 while an AI FMS is inserted.</p>
158	Advisory	<p>Aspiration, phaco power, and vitrectomy cutting are unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check for irrigation path obstructions. 2) Replace FMS. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Unable to achieve IOP.	Aspiration, phaco power, vitrectomy cutting, and possibly irrigation are temporarily disabled.
159	Advisory	<p>Irrigation is unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Replace FMS. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Excessive irrigation pressure.	<p>Irrigation is disabled.</p> <p>After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0.</p>
160	Advisory	<p>FMS calibration failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Reinsert FMS. <p>If condition persists, replace FMS.</p>	FMS calibration failed. OPS imaging failure.	<p>1) FMS is ejected.</p> <p>2) The Advisory is automatically closed when an FMS is inserted.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
161	Advisory	<p>Vacuum check failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check luer fittings and reprime. 2) If condition persists, reinsert or replace FMS. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Vacuum check failed – low irrigation pressure.	System goes to Not Primed status.
162	Advisory	Same as previous entry.	Vacuum check failed – slow vacuum rise.	Same as previous entry.
163	Advisory	Same as previous entry.	Vacuum check failed – slow irrigation vent.	Same as previous entry.
164	Advisory	Same as previous entry.	Vacuum check failed – unable to verify pressure.	Same as previous entry.
165	Advisory	Same as previous entry.	Vacuum check failed – low maximum vacuum.	Same as previous entry.
166	Advisory	Same as previous entry.	Vacuum check failed – slow vent.	Same as previous entry.
167	Advisory	Same as previous entry.	Vacuum check failed – excessive vacuum leak.	Same as previous entry.
168	Advisory	<p>Flow obstruction.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check handpiece free flow. 2) If condition persists, replace phaco tip or sleeve. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Flow check failed – excessive vacuum rise.	Selected Phaco handpiece goes to Not Tested status.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
169	Advisory	<p>Irrigation pressure is low.</p> <p>Recommended actions:</p> <p>1) Check bottle fluid level.</p> <p>Alternate actions:</p> <p>1) Check for kinked lines or loose fittings.</p>	<p>Infusion pressure drop.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p> <p>Note: This advisory is only displayed in Surgery Mode, with Passive Irrigation enabled, when the footswitch treadle is not in FP0. It is displayed only in Phaco, I/A, Vitrectomy, and Irrigation Footswitch Steps.</p>	<p>1) Phaco power, Aspiration, and Vitrectomy cutting are disabled until the low infusion pressure condition no longer exists and the footswitch treadle has been released to FP0 or FP1.</p> <p>2) If the user doesn't dismiss the Advisory it will be automatically removed when the condition no longer exists.</p> <p>3) After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0.</p>
170	Advisory	<p>Reflux terminated. Reflux fluid volume depleted. Reflux will be unavailable until fluid is aspirated.</p> <p>Recommended actions:</p> <p>Aspirate fluid.</p>	<p>Reflux terminated – reflux fluid volume depleted</p>	<p>None</p>
171	Advisory	<p>Drain bag is full.</p> <p>Recommended actions:</p> <p>Replace FMS.</p>	<p>Excessive pressure in drain bag (drain bag is full).</p> <p>Note: This advisory is displayed only during venting.</p>	<p>None</p>
179	Advisory	<p>FMS barcode invalid.</p> <p>Recommended actions:</p> <p>1) Reinsert FMS</p> <p>If condition persists, replace FMS.</p>	<p>Cassette calibration failed.</p> <p>Invalid barcode data.</p>	<p>1) FMS is ejected.</p> <p>2) The Advisory is automatically closed when an FMS is inserted.</p>
180	Advisory	<p>Invalid FMS ID.</p> <p>Recommended actions:</p> <p>1) Reinsert FMS.</p> <p>If condition persists, replace FMS.</p>	<p>Cassette calibration failed. Invalid cassette ID.</p>	<p>Same as previous entry.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
181	Advisory	<p>FMS calibration failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Reinsert FMS. 2) If condition persists, replace FMS. 3) If condition persists, restart system. 4) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Cassette calibration failed.</p> <p>Irrigation valve homing failed.</p>	Same as previous entry.
182	Advisory	<p>FMS calibration failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Reinsert FMS. 2) If condition persists, replace FMS. 3) If condition persists, restart system. 4) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Cassette calibration failed.</p> <p>Vent valve homing failed.</p>	Same as previous entry.
190	Advisory	<p>Active Fluidics is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove FMS. 2) Use Gravity Fluidics. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>BPS failed.</p> <p>Note: This Advisory is displayed at startup and then subsequently every time AI FMS insertion is attempted. One of possible conditions for this advisory is failure to perform the Zero Calibrate BPS operation.</p>	When this advisory is displayed on insertion of an AI FMS, the FMS is rejected.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
191	Advisory	<p>Active Fluidics is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove FMS. 2) Use Gravity Fluidics. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Bag ID failed.	<p>System goes to Not Primed status.</p> <p>After the user dismisses the advisory it is redisplayed if the condition still exists and the footswitch treadle is depressed from FP0 while an AI FMS is inserted.</p>
ULTRASONICS MECHANISM – 2XX				
201	Warning	<p>Ultrasound not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	<p>1) Phaco handpieces go to Not Tested status.</p> <p>2) Test Handpiece button in Setup screen is ghosted if selected handpiece is a phaco handpiece.</p>
203	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
205	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
206	Warning	Same as previous entry.	Command range error.	Same as previous entry.
226	Warning	Same as previous entry.	Host fault	Same as previous entry.
227	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
228	Warning	Same as previous entry.	Host range error.	Same as previous entry.
229	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
230	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
231	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
232	Warning	Same as previous entry.	Fluidics mechanism fault.	Same as previous entry.
233	Warning	Same as previous entry.	Fluidics mechanism timeout.	Same as previous entry.
234	Warning	Same as previous entry.	Fluidics mechanism range error.	Same as previous entry.
244	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
245	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
246	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
249	Warning	Same as previous entry.	Generator subsystem fault.	Same as previous entry.
250	Advisory	<p>Testing in air.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Fill test chamber completely. 2) Re-test handpiece. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Connect handpiece to other port and re-test. 2) If condition persists, replace handpiece. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Tune failed - tuning in air.	<p>1) Phaco handpiece status is set to Not Tested.</p> <p>2) System Fault 403 is generated instead if this advisory is received in surgery.</p>
254	Advisory	<p>Loose tip.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Tighten or replace tip. 2) Re-test handpiece. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Connect handpiece to other port. 2) Re-test handpiece. <p>If condition persists, replace handpiece.</p>	Tune failed – loose tip.	Same as previous entry.
255	Advisory	Same as previous entry.	Loose tip.	Application of phaco power is halted in FP3, but user can re-apply phaco power by exiting FP3 and then re-entering FP3.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
256	Advisory	<p>Handpiece test failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove and reconnect handpiece. 2) If condition persists, try other port. 3) If condition persists, replace handpiece. 4) If condition persists and in surgery, stabilize the eye then restart system. 5) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Tune failed – handpiece current low (open circuit).	Same as previous entry.
257	Advisory	Same as previous entry.	Tune failed – handpiece voltage low (short circuit).	Same as previous entry.
258	Advisory	Same as previous entry.	Tune failed – frequency order.	Same as previous entry.
260	Advisory	Same as previous entry.	Tune failed – series frequency margin.	Same as previous entry.
261	Advisory	Same as previous entry.	Tune failed – parallel frequency margin.	Same as previous entry.
263	Advisory	Same as previous entry.	Tune failed – bandwidth low.	Same as previous entry.
264	Advisory	Same as previous entry.	Tune failed – bandwidth high.	Same as previous entry.
266	Advisory	Same as previous entry.	Tune failed – boost supply voltage.	Same as previous entry.
268	Advisory	<p>Handpiece test failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press 'Return to Setup Screen'. <p>Re-test handpiece.</p>	Tune failed - step type (tune command received outside of Setup).	<ol style="list-style-type: none"> 1) Phaco handpiece status is set to Not Tested. 2) A "Return to Setup Screen" Button is provided in the advisory dialog.
269	Advisory	<p>Handpiece test failed.</p> <p>Recommended actions:</p> <p>Re-test handpiece.</p>	Tune failed – power not ready.	<ol style="list-style-type: none"> 1) Phaco handpiece status is set to Not Tested.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
270	Advisory	<p>Handpiece fault detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Connect handpiece to other port. 2) Re-test handpiece. 3) If condition persists, replace handpiece. 4) If condition persists and in surgery, stabilize the eye then restart system. 5) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>U/S HP failure - corrupt handpiece (bad CRC).</p> <p>Note: 29: Bottom Port 30: Middle Port 31: Top Port</p>	None
272	Advisory	Same as previous entry.	U/S HP failure - handpiece current low (open circuit).	Application of phaco power is halted in FP3, but user can re-apply phaco power by exiting FP3 and then re-entering FP3.
273	Advisory	Same as previous entry.	U/S HP failure - handpiece voltage low (short circuit).	Same as previous entry.
274	Advisory	<p>Ultrasound error.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle and retry. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	U/S HP failure - excessive power.	Same as previous entry.
277	Advisory	<p>Handpiece disconnected while applying U/S power.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle. <p>Insert and test handpiece.</p>	U/S handpiece disconnected while footswitch engaged.	Phaco handpieces go to Not Tested status.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
278	Advisory	<p>Handpiece fault detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Connect handpiece to other port. 2) Re-test handpiece. 3) If condition persists, replace handpiece. 4) If condition persists and in surgery, stabilize the eye then restart system. 5) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	U/S HP failure - corrupt handpiece (bad data).	Same as previous entry.
279	Advisory	<p>Unknown handpiece detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove and inspect cable connector for debris. 2) Verify handpiece compatibility. 3) If condition persists, connect to other port. 4) If condition persists, replace handpiece. 5) If condition persists and in surgery, stabilize the eye then restart system. 6) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Unknown handpiece.	<ol style="list-style-type: none"> 1) Handpiece status goes to "Unknown". 2) This advisory is automatically dismissed if the handpiece is removed.
280	Advisory	Same as previous entry.	Unsupported handpiece.	<ol style="list-style-type: none"> 1) Handpiece status goes to "Unknown". 2) This advisory is automatically dismissed if the handpiece is removed.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
290	Advisory	<p>Ultrasound error.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle and retry. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Boost supply out of range.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>Application of phaco power is halted in FP3, but user can re-apply phaco power by exiting FP3 and then re-entering FP3.</p>
291	Advisory	<p>Ultrasound error.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle, wait 10 seconds, then retry. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>FET temperature out of range.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>Application of phaco power is halted in FP3, but user can re-apply phaco power by exiting FP3, waiting about 10 seconds, and then re-entering FP3.</p>
292	Advisory	N/A	<p>Fan speed out of range.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>The event is saved in the Event Log but the advisory is not displayed to the user.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
293	Advisory	<p>Ultrasound error.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle and retry. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Power good, not ready.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>Application of phaco power is halted in FP3, but user can re-apply phaco power by exiting FP3 and then re-entering FP3.</p>
FOOTSWITCH MECHANISM – 3XX				
301	Warning	<p>Surgical functionality not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	<ol style="list-style-type: none"> 1) All footswitch functionality is disabled. 2) Prime, Fill, and Test Handpiece buttons are disabled. If a button is pressed, the subsystem status dialog is displayed. 3) System goes to Not Primed status. 4) System goes to Not Tuned status. 5) Footswitch Status displays position 0.
303	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
305	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
306	Warning	Same as previous entry.	Command range error.	Same as previous entry.
307	Warning	Same as previous entry.	Voltage failure.	Same as previous entry.
326	Warning	Same as previous entry.	Host fault	Same as previous entry.
327	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
328	Warning	Same as previous entry.	Host range error.	Same as previous entry.
344	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
345	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
346	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
349	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
350	Advisory	<p>Footswitch failure detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Inspect footswitch, clean under rear section of treadle and remove debris if present. (Reference Maintenance section of Operator's Manual.) 2) Inspect and reconnect footswitch connector. 3) Ensure treadle is not depressed then reset footswitch. 4) If condition persists, replace footswitch. 5) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Up-switch failure.</p> <p>Note: This advisory most often occurs as a result of user error, and resetting the footswitch will solve the problem. If there is a true hardware failure the advisory will appear again after the reset, and the footswitch must be removed.</p> <p>Note: This advisory is generated only for the Laureate and Constellation Footswitches.</p>	<p>The footswitch is reset and the Advisory is dismissed when the user presses the "Reset Footswitch" Button.</p> <p>The Advisory is automatically dismissed if the footswitch is disconnected.</p>
351	Advisory	<p>Footswitch failure detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Inspect and reset footswitch. 2) If condition persists, replace footswitch. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Encoder failure.</p> <p>Note: This advisory most often occurs as a result of user error, and resetting the footswitch will solve the problem. If there is a true hardware failure the advisory will appear again after the reset, and the footswitch must be removed.</p> <p>Note: This advisory is generated only for the Laureate and Constellation Footswitches.</p>	<p>The footswitch is reset and the Advisory is dismissed when the user presses the "Reset Footswitch" Button.</p> <p>The Advisory is automatically dismissed if the footswitch is disconnected.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
352	Advisory	<p>Footswitch failure.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Inspect and reconnect footswitch connector. 2) If condition persists, replace footswitch. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Detent failure.</p> <p>Note: This advisory is generated only for the Laureate and Constellation Footswitches.</p>	<p>Footswitch Status displays position 0. If the Footswitch Button is pressed while the footswitch is still connected, the advisory message is redisplayed and the advisory tone is emitted.</p> <p>The Advisory is automatically dismissed if the footswitch is disconnected.</p>
358	Advisory	<p>Footswitch charging while cradled is unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Cable the footswitch if charging is desired. 2) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Footswitch charger proximity sensor error.</p>	<p>This advisory is suppressed while in the Surgery Screen and any time an FMS is inserted. (This avoids a nuisance advisory during surgery.)</p>
359	Advisory	<p>Same as previous entry.</p>	<p>Footswitch charger voltage out of range.</p>	<p>Same as previous entry.</p>
360	Advisory	<p>Footswitch battery is low.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Cradle the footswitch after surgical cases have been completed. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Centurion Footswitch battery low.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<ol style="list-style-type: none"> 1) This advisory is displayed only if the condition exists when communication with a wireless footswitch is initiated. 2) This advisory is not re-displayed unless footswitch pairing occurs. 3) This advisory is suppressed while a non-Centurion Footswitch is connected. 4) This advisory is suppressed while the Centurion Footswitch is cabled.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
361	Advisory	<p>Footswitch battery is critically low. Footswitch functionality may be lost unexpectedly.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Connect footswitch cable to console. 2) Cradle the footswitch after surgical cases have been completed. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Centurion Footswitch battery critically low.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>1) This advisory is not re-displayed unless footswitch pairing occurs.</p> <p>2) This advisory is suppressed while a non-Centurion Footswitch is connected.</p> <p>3) This advisory is suppressed while the Centurion Footswitch is cabled.</p>
362	Advisory	<p>Footswitch version not supported.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Replace footswitch. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Incompatible software version.</p> <p>Note: this Advisory is generated when a footswitch is cabled or cradled.</p>	<p>Footswitch status indicates footswitch not connected.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>
363	Advisory	<p>Footswitch communication lost.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle. 2) If footswitch is wireless, move footswitch and console closer, or eliminate obstruction. 3) If footswitch is cabled, replace cable. <p>If condition persists, replace footswitch.</p>	<p>Communication timeout (console not hearing from footswitch).</p> <p>Changing the Footswitch Channel may solve this problem.</p>	<p>1) Footswitch status indicates footswitch not connected.</p> <p>2) If communication is subsequently reestablished, the Footswitch Mechanism waits until the treadle is returned to FP0 or FP1 before broadcasting a resumption of communication and transmitting footswitch input.</p> <p>3) If communication resumes while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
364	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle. If condition persists, replace footswitch.	Encoder failure.	1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.) 2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds. This advisory is suppressed while a non-Centurion Footswitch is connected.
365	Advisory	Same as previous entry.	Broken spring.	Same as previous entry.
366	Advisory	Footswitch detent failure detected. Detent vibration will not be provided. Recommended actions: 1) Release footswitch treadle. 2) Proceed with surgery. If condition persists after restart, replace footswitch.	Centurion Footswitch detent motor failure. (Footswitch continues to operate.) Note: This Advisory is generated by the Host based on real-time status.	This advisory is suppressed while a non-Centurion Footswitch is connected.
367	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle. If condition persists, replace footswitch.	Accelerometer failure.	1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.) 2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds. This advisory is suppressed while a non-Centurion Footswitch is connected.
368	Advisory	Same as previous entry.	Software error.	Same as previous entry.
369	Advisory	Footswitch wireless operation unavailable. Recommended actions: 1) Do not disconnect footswitch cable. If condition persists, replace footswitch.	Centurion Footswitch modem failure. (Footswitch continues to operate.) Note: This Advisory is generated by the Host based on real-time status. It can occur only while the footswitch is cabled.	This advisory is suppressed while a non-Centurion Footswitch is connected.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
370	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle. If condition persists, replace footswitch.	Treadle homing failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.)	If the condition clears while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds. This advisory is suppressed while a non-Centurion Footswitch is connected.
371	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle. If condition persists, replace footswitch.	Watchdog timeout.	1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.) 2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds. This advisory is suppressed while a non-Centurion Footswitch is connected.
372	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle and buttons. 2) Place footswitch in horizontal position. If condition persists, replace footswitch.	Centurion Footswitch up-switch failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	This advisory is suppressed while a non-Centurion Footswitch is connected.
373	Advisory	Same as previous entry.	Centurion Footswitch left vertical switch failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	If the condition clears while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds. This advisory is suppressed while a non-Centurion Footswitch is connected.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
374	Advisory	Same as previous entry.	Centurion Footswitch left horizontal switch failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	Same as previous entry.
375	Advisory	Same as previous entry.	Centurion Footswitch right vertical switch failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	Same as previous entry.
376	Advisory	Same as previous entry.	Centurion Footswitch right horizontal switch failure. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	Same as previous entry.
377	Advisory	Footswitch failure detected. Recommended actions: 1) Release footswitch treadle. If condition persists, replace footswitch.	Centurion Footswitch treadle excessive travel. (Footswitch continues to operate but treadle and buttons are forced to the disengaged state.) Note: This Advisory is generated by the Host based on real-time status.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
378	Advisory	Same as previous entry.	Wireless data out of range (received by footswitch).	<p>1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.)</p> <p>2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>
379	Advisory	Same as previous entry.	<p>CAN communication timeout. (Footswitch not hearing from console.)</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	<p>If the condition clears while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>
380	Advisory	Same as previous entry.	CAN data out of range (received by footswitch).	<p>1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.)</p> <p>2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
381	Advisory	<p>Footswitch failure detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Connect footswitch cable to console. <p>If condition persists, replace footswitch.</p>	Battery communication error (during wireless operation).	<p>1) Footswitch status indicates footswitch not connected. (Because footswitch automatically resets.)</p> <p>2) If footswitch status returns to connected while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>3) If footswitch is cabled while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>
382	Advisory	Same as previous entry.	Battery failure (during wireless operation).	Same as previous entry.
383	Advisory	<p>Footswitch pairing failed. Wireless operation unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Remove and re-cradle the footswitch for at least 5 seconds. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Connect footswitch cable to console. 2) If condition persists, replace footswitch. 	Pairing failed (pairing handshake over wireless failed).	<p>If footswitch pairing succeeds while the dialog is displayed, the dialog is automatically dismissed. The dialog is not automatically dismissed until it has been displayed for at least 5 seconds.</p> <p>This advisory is suppressed while a non-Centurion Footswitch is connected.</p>
384	Advisory	N/A	<p>Centurion Footswitch recovered from critical error.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	The event is saved in the Event Log but the advisory is not displayed to the user.
385	Advisory	N/A	<p>Centurion Footswitch recovered from communicator software error.</p> <p>Note: This Advisory is generated by the Host based on real-time status.</p>	The event is saved in the Event Log but the advisory is not displayed to the user.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
386	Advisory	N/A	Centurion Footswitch pairing data corrupt. Note: This Advisory is generated by the Host based on real-time status.	The event is saved in the Event Log but the advisory is not displayed to the user.
387	Advisory	Footswitch wireless operation unavailable. Recommended actions: 1) If in surgery, do not disconnect footswitch cable. 2) Between surgical cases, disconnect and reconnect footswitch cable. If condition persists, replace footswitch.	Centurion Footswitch battery communication error (during cabled operation).	This advisory is suppressed while a non-Centurion Footswitch is connected.
388	Advisory	Same as previous entry.	Centurion Footswitch battery failure (during cabled operation).	Same as previous entry.
HOST – 4XX				
400	Fault	System not operational. Recommended actions: 1) Press Standby Switch to shut down system. 2) Restart system. 3) If condition persists, note Fault number and contact Alcon Technical Services. Alcon Technical Services < Contact Info System Setting>	POST progress incomplete.	All mechanisms go to safe state.
401	Fault	Same as previous entry.	FlexRay error (or other subsystem transport error).	Same as previous entry.
403	Fault	Same as previous entry.	Software error: <specific detail identifying the error>	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
404	Fault	<p>System not operational.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press Standby Switch to shut down system. 2) Restart system. <p>If condition persists, note Fault number and contact Alcon Technical Services.</p>	Corrupt or missing file: <file name>	Same as previous entry.
405	Fault	<p>System not operational.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press Standby Switch to shut down system. 2) Restart system. 3) If condition persists, note Fault number and contact Alcon Technical Services. <p>Alcon Technical Services < Contact Info System Setting></p>	<p>Incompatible software version: <subsystem(s)> or Incompatible logicware version: <subsystem(s)></p>	Same as previous entry.
406	Fault	Same as previous entry.	Incompatible firmware version: BIOS.	Same as previous entry.
407	Fault	<p>System not operational.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press Standby Switch to shut down system. 2) Restart system. <p>If condition persists, note Fault number and contact Alcon Technical Services.</p>	Data partition corruption: <specific detail identifying the error>.	Same as previous entry.
408	Fault	Same as previous entry.	Initialization error: <specific detail identifying the error>.	<p>All mechanisms go to safe state.</p> <p>This event may or may not be recorded in the Event Log, depending on how early in initialization it occurs.</p>

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
420	Fault	<p>System not operational.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press Standby Switch to shut down system. 2) Restart system. 3) If condition persists, note Fault number and contact Alcon Technical Services. <p>Alcon Technical Services < Contact Info System Setting></p>	Host Module fan failure.	All mechanisms go to safe state.
431	Warning	<p>AC power lost. Continuing on battery power. Surgical functionality is not available.</p> <p>Recommended actions:</p> <p>Restore AC power as soon as possible to reactivate surgical functionality.</p>	Unexpected loss of A/C Power.	<p>The Warning is automatically dismissed if A/C Power is restored.</p> <p>The Warning is automatically dismissed if Warning 432 occurs.</p> <p>Note: This Warning can't be dismissed by the user.</p>
432	Warning	<p>Backup power depleted. System will shut down.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restore AC power and restart system. 	Battery voltage low while operating on battery Power.	<p>The system shuts down. The user can't prevent shutdown by restoring A/C Power.</p> <p>Note: This Warning can't be dismissed by the user.</p>
433	Warning	<p>Backup power unavailable. System will shut down.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restore AC power and restart system. 	Battery temperature out of range while operating on battery power.	<p>The system shuts down. The user can't prevent shutdown by restoring A/C Power.</p> <p>Note: This Warning can't be dismissed by the user.</p>
450	Advisory	<p>Footswitch is depressed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle before pressing Prime FMS, Fill, or Test Handpiece. <p>If condition persists, clear obstruction preventing footswitch release.</p>	<p>Footswitch depressed beyond FP0 when user commands Prime, Fill, or Test Handpiece, or while one of these commands is executing.</p> <p>Note: This advisory is not displayed for Test ICD.</p>	The commanded action (Prime FMS, Fill, or Test Handpiece) is not performed or is canceled.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
451	Advisory	<p>Cannot recognize footswitch.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check footswitch connection and reset footswitch. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Wired footswitch is not supported or the footswitch type is not recognized.	The footswitch is reset and the Advisory is dismissed when the user presses the "Reset Footswitch" Button.
452	Advisory	<p>The IOP setting cannot be achieved due to the current PEL setting. The IOP setting will be adjusted to the closest valid setting.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note current IOP and PEL settings. Update settings as necessary or proceed with current settings. 	IOP setting for the current step is out of range.	IOP setting is changed to the closest valid setting. (This is an unsaved change.)
453	Advisory	<p>The Irrigation Pressure setting cannot be achieved due to the current PEL setting. The Irrigation Pressure setting will be adjusted to the closest valid setting.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note current Irrigation Pressure and PEL settings. Update settings as necessary or proceed with current settings. 	<p>Irrigation Pressure setting for the current step is out of range.</p> <p>Note: This advisory is displayed only in Passive Irrigation Mode.</p>	Irrigation Pressure setting is changed to the closest valid setting. (This is an unsaved change.)
460	Advisory	<p>Footswitch not detected.</p> <p>Recommended actions:</p> <p>Install footswitch.</p>	<p>Footswitch not connected after FMS is inserted and successfully calibrated, or cabled footswitch is disconnected while FMS is inserted.</p> <p>Note: This advisory is not generated if Advisory 362, 363, 364, 365, 367, 368, 371, 378, 380, 381, or 382 is signaled simultaneously.</p>	<ol style="list-style-type: none"> 1) All mechanisms assume footswitch position 0. 2) The advisory is redisplayed if the GUI Footswitch Button is pressed while the condition persists, and Advisory 363 is not signaled simultaneously. 3) The advisory is automatically dismissed if a footswitch is connected.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
463	Advisory	<p>The language translation is invalid.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Proceed with surgical cases. 2) Note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>A language translation is corrupted or missing. This advisory occurs only when attempting to select the language in the System Settings Dialog.</p>	<p>The invalid language is not selected.</p>
464	Advisory	<p>The selected language translation is invalid. English will be used by default.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Proceed with surgical cases. 2) Note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Language translation for the selected language is corrupted or missing. This advisory occurs only at startup.</p>	<p>The language defaults to English, but the System Setting for language is not changed.</p>
465	Advisory	<p>The test sequence was interrupted by removal of the handpiece.</p> <p>Recommended actions:</p> <p>Install handpiece and re-test.</p>	<p>Phaco handpiece was removed during tune.</p>	<p>Phaco handpiece status is set to Not Tested.</p>
466	Advisory	<p>A third handpiece has been inserted. This handpiece has been disabled.</p> <p>Recommended actions:</p> <p>Remove any handpiece.</p>	<p>Three Phaco handpieces are inserted.</p> <p>Note: This advisory is displayed only when the footswitch is in FP0.</p>	<ol style="list-style-type: none"> 1) The name of the most recently inserted handpiece is displayed as “Not Used”. 2) The advisory is automatically dismissed if any handpiece is removed.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
468	Advisory	<p>Doctor file unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Restore doctor file from backup media. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Select Alcon Settings doctor file. <p>See the About Dialog for Alcon Technical Services contact information.</p>	I/O Error.	The user cannot select this doctor.
469	Advisory	<p>Doctor file corrupted.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Restore doctor file from backup media. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Select Alcon Settings doctor file. <p>See the About Dialog for Alcon Technical Services contact information.</p>	CRC verification failed.	The user cannot select this doctor.
470	Advisory	<p>Doctor file invalid.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Restore doctor file from backup media. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>Alternate actions:</p> <ol style="list-style-type: none"> 1) Select Alcon Settings doctor file. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Doctor file is incomplete or contains invalid data.	The user cannot select this doctor.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
472	Advisory	N/A	Abnormal termination of host application detected at startup.	The event is saved in the Event Log but the advisory is not displayed to the user.
473	Advisory	<p>System service needed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note Advisory number. 2) Proceed with surgical cases. 3) Contact Alcon Technical Services for system service. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>One of two Host Module fans has failed.</p> <p>Note: this Advisory is displayed only at system startup.</p>	N/A
475	Advisory	<p>CPU Battery should be replaced.</p> <p>System clock may be incorrect.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note Advisory number. 2) Update date and time. 3) Proceed with surgical cases. 4) Contact Alcon Technical Services to replace battery. <p>See the About Dialog for Alcon Technical Services contact information.</p>	CMOS battery depleted, voltage is below 2.2.	This condition is checked only at system startup.
477	Advisory	<p>System security has been compromised.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note Advisory number. 2) Contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Windows write filter is disabled.	This condition is checked only at system startup, and only in release mode builds.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
478	Advisory	<p>System security has been compromised.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Note Advisory number. 2) Contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Keyboard filter has been disabled.	This condition is checked only in release mode builds.
486	Advisory	<p>The AutoSert setup operation was canceled due to a step change.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Select an I/A or AutoSert step. Continue AutoSert handpiece setup. 	N/A	In-progress Load Plunger or Preload Lens operation is canceled.
490	Advisory	N/A	Video Overlay unavailable due to software error.	The event is saved in the Event Log but the advisory is not displayed to the user.
491	Advisory	<p>Wi-Fi network initialization failed. Wireless Video Overlay is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) You may proceed with surgical cases. 2) Optionally, you may restart the system to correct the condition. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Wi-Fi radio configuration failed.</p> <p>Note: This advisory is displayed only at system startup or when the user is configuring the Wi-Fi network in the System Settings Dialog.</p>	If this advisory occurs at startup and the Wi-Fi Network System Setting is OFF, the event is saved in the Event Log but the advisory is not displayed to the user. (This avoids a nuisance advisory.)

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
VIT MECHANISM – 5XX				
501	Warning	<p>Vitrectomy not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
503	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
505	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
506	Warning	Same as previous entry.	Command range error.	Same as previous entry.
507	Warning	Same as previous entry.	Valve control failure.	Same as previous entry.
508	Warning	Same as previous entry.	Front manifold pressure sensor failure.	Same as previous entry.
526	Warning	Same as previous entry.	Host fault	Same as previous entry.
527	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
528	Warning	Same as previous entry.	Host range error.	Same as previous entry.
529	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
530	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
531	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
532	Warning	Same as previous entry.	Fluidics mechanism fault.	Same as previous entry.
533	Warning	Same as previous entry.	Fluidics mechanism timeout.	Same as previous entry.
534	Warning	Same as previous entry.	Fluidics mechanism range error.	Same as previous entry.
541	Warning	Same as previous entry.	Pump mechanism fault.	Same as previous entry.
542	Warning	Same as previous entry.	Pump mechanism timeout.	Same as previous entry.
543	Warning	Same as previous entry.	Pump mechanism range error.	Same as previous entry.
544	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
545	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
546	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
549	Warning	Same as previous entry.	IA subsystem fault.	Same as previous entry.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
550	Advisory	<p>Vitrectomy high-speed cutting is compromised.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Proceed with lower cut rate 2000 cpm or below, or replace vitrector. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Vitrector low pressure while cutting.	Vitrectomy cutting is disabled until footswitch treadle is released to a range 1 and then back to range 2.
551	Advisory	<p>Vitrectomy cutting is disabled.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check vitrectomy connection. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Vitrectomy differential pressure error.	Vitrectomy cutting is disabled until footswitch treadle is released to range 1 and then back to range 2.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
552	Advisory	<p>Vitrectomy cutting is unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle. 2) Check vitrectomy connection. 3) If condition persists and in surgery, stabilize the eye then restart system. 4) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Probe connection error.	Vitrectomy cutting and aspiration are disabled until footswitch is released to FP0 and then depressed again.
COAG MECHANISM – 6XX				
601	Warning	<p>Coagulation is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
603	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
605	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
606	Warning	Same as previous entry.	Command range error.	Same as previous entry.
607	Warning	Same as previous entry.	Power control failure.	Same as previous entry.
626	Warning	Same as previous entry.	Host fault	Same as previous entry.
627	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
628	Warning	Same as previous entry.	Host range error.	Same as previous entry.
629	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
630	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
631	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
635	Warning	Same as previous entry.	Tone mechanism fault.	Same as previous entry.
636	Warning	Same as previous entry.	Tone mechanism timeout.	Same as previous entry.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
637	Warning	Same as previous entry.	Tone mechanism range error.	Same as previous entry.
644	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
645	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
646	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
649	Warning	Same as previous entry.	IA subsystem fault.	Same as previous entry.
650	Advisory	<p>Coagulation is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If condition persists and in surgery, stabilize the eye then restart system. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Coag handpiece failure – excessive power.	None
IV POLE MECHANISM – 7XX				
701	Warning	<p>IV Pole not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
703	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
705	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
706	Warning	Same as previous entry.	Command range error.	Same as previous entry.
707	Warning	Same as previous entry.	Stop check failure.	Same as previous entry.
708	Warning	Same as previous entry.	Encoder failure.	Same as previous entry.
709	Warning	Same as previous entry.	Home Sensor failure.	Same as previous entry.
710	Warning	Same as previous entry.	Drive Train failure.	Same as previous entry.
711	Warning	Same as previous entry.	Calibration failure.	Same as previous entry.
726	Warning	Same as previous entry.	Host fault	Same as previous entry.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
727	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
728	Warning	Same as previous entry.	Host range error.	Same as previous entry.
744	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
745	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
746	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
749	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.
750	Advisory	<p>IV Pole jammed. Pole may not have achieved desired height.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Check for external obstacles. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Pole impeded.	None
IOL MECHANISM – 8XX				
801	Warning	<p>AutoSert not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None.
803	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
805	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
806	Warning	Same as previous entry.	Command range error.	Same as previous entry.
826	Warning	Same as previous entry.	Host fault	Same as previous entry.
827	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
828	Warning	Same as previous entry.	Host range error.	Same as previous entry.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
829	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
830	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
831	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
835	Warning	Same as previous entry.	Tone mechanism fault.	Same as previous entry.
836	Warning	Same as previous entry.	Tone mechanism timeout.	Same as previous entry.
837	Warning	Same as previous entry.	Tone mechanism range error.	Same as previous entry.
844	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
845	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
846	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
849	Warning	Same as previous entry.	Generator subsystem fault.	Same as previous entry.
860	Advisory	Two AutoSert Handpieces detected. Recommended actions: Remove one AutoSert Handpiece and proceed.	Multiple handpieces connected. Note: This advisory is generated only while the footswitch is in treadle range 0.	1) AutoSert functions are disabled. 2) After the user dismisses the advisory it is redisplayed if the condition still exists and the AutoSert Step is selected. 3) This advisory is automatically dismissed if an AutoSert handpiece is removed. Note: If the footswitch is beyond treadle range 0 when this condition occurs both handpieces may be driven simultaneously.
889	Advisory	Handpiece fault detected. Recommended actions: 1) Replace AutoSert handpiece. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	AutoSert HP failure – corrupt handpiece (bad CRC) Note: 30: Middle Port 31: Top Port	1) AutoSert functions are disabled. 2) Red handpiece icon displayed. 3) Handpiece status displays “Unknown”.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
890	Advisory	<p>AutoSert error occurred.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle and retry. 2) If condition persists, replace AutoSert handpiece. 3) If condition persists and in surgery, stabilize the eye then restart system. 4) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	AutoSert HP failure – motor not moving (move check timeout)	Current IOL function in FP2 is terminated. User can retry by exiting and re-entering FP2.
891	Advisory	<p>AutoSert handpiece impeded.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle and retry. 2) If condition persists, replace AutoSert handpiece. 3) If condition persists and in surgery, stabilize the eye then restart system. 4) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	AutoSert HP failure – speed out of range	Same as previous entry.

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EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
892	Advisory	<p>Handpiece fault detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Reinsert handpiece cable connector. 2) If condition persists, replace AutoSert Handpiece. 3) If condition persists and in surgery, stabilize the eye then restart system. 4) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	AutoSert HP failure – travel out of range	<ol style="list-style-type: none"> 1) Current AutoSert function is terminated. 2) AutoSert functions are disabled. 3) Red AutoSert handpiece icon displayed. 4) Handpiece status displays “Unusable”.
893	Advisory	<p>AutoSert handpiece calibration failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Replace AutoSert Handpiece. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	AutoSert HP failure – calibration failed	Same as previous entry.
894	Advisory	<p>Handpiece must be in fully retracted position prior to autoclave.</p> <p>Recommended actions:</p> <p>Reinsert AutoSert Handpiece.</p>	<p>AutoSert HP failure – unexpected AutoSert handpiece disconnect.</p> <p>Note: Handpiece retracts when re-inserted and calibration performed.</p>	AutoSert functions are disabled.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
895	Advisory	<p>Handpiece fault detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Replace AutoSert Handpiece. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>AutoSert HP failure – corrupt handpiece (bad data)</p>	<ol style="list-style-type: none"> 1) AutoSert functions are disabled. 2) Red handpiece icon displayed. 3) Handpiece status displays “Unknown”.
897	Advisory	<p>Handpiece fault detected.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Replace AutoSert Handpiece. 2) If condition persists and in surgery, stabilize the eye then restart system. 3) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>AutoSert HP failure - unexpected motor feedback/movement.</p> <p>Note: Mechanism will check for this condition at startup and while the AutoSert handpiece is connected.</p>	<ol style="list-style-type: none"> 1) AutoSert functions are disabled. 2) Red AutoSert handpiece icon displayed. 3) Handpiece status displays “Unusable”.
PUMP MECHANISM – 9XX				
901	Warning	<p>Vitrectomy not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
903	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
905	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
907	Warning	Same as previous entry.	Vent valve failure.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
908	Warning	Same as previous entry.	Vit isolation valve failure.	Same as previous entry.
909	Warning	Same as previous entry.	Pump isolation valve failure.	Same as previous entry.
910	Warning	Same as previous entry.	Pump motor failure.	Same as previous entry.
911	Warning	Same as previous entry.	Charge timeout.	Same as previous entry.
912	Warning	Same as previous entry.	Excessive pressure.	Same as previous entry.
926	Warning	Same as previous entry.	Host fault	Same as previous entry.
927	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
928	Warning	Same as previous entry.	Host range error.	Same as previous entry.
929	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
930	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
931	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
932	Warning	Same as previous entry.	Fluidics mechanism fault.	Same as previous entry.
933	Warning	Same as previous entry.	Fluidics mechanism timeout.	Same as previous entry.
934	Warning	Same as previous entry.	Fluidics mechanism range error.	Same as previous entry.
944	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
945	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
946	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
949	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.
950	Advisory	<p>Pump leak detected. Vitrectomy cutting may be unavailable.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Verify if vitrectomy cutter is disabled. 2) If condition persists, note advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Leak detected.	None

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
AUTOCAP MECHANISM – 10XX				
1001	Warning	<p>Capsulotomy is not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
1003	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
1005	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
1006	Warning	Same as previous entry.	Command range error.	Same as previous entry.
1015	Warning	Same as previous entry.	<p>Incompatible hardware.</p> <p>Note: This fault occurs only at system startup, if the AutoCap EEPROM data CRC check fails.</p>	Same as previous entry.
1026	Warning	Same as previous entry.	Host fault	Same as previous entry.
1027	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
1028	Warning	Same as previous entry.	Host range error.	Same as previous entry.
1029	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
1030	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
1031	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
1044	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
1045	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
1046	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
1049	Warning	Same as previous entry.	Generator subsystem fault.	Same as previous entry.
1050	Advisory	<p>Footswitch is depressed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Release footswitch treadle before enabling Capsulotomy. 	Footswitch depressed beyond FP1 when the user enabled AutoCap.	AutoCapsulorhexis is not enabled. The advisory is automatically dismissed when the treadle is released to FP0.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
1061	Advisory	ICD test failed. Recommended actions: Re-test ICD.	Test failed – power not ready.	Same as previous entry.
1062	Advisory	ICD test failed. Recommended actions: 1) Remove and reconnect ICD, then re-test ICD. 2) If condition persists, replace ICD. 3) If condition persists and in surgery, stabilize the eye then restart system. 4) If condition persists after restart, note Advisory number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Test failed - open circuit.	Same as previous entry.
1063	Advisory	Same as previous entry.	Test failed - short circuit.	Same as previous entry.
1064	Advisory	Same as previous entry.	Test failed - power out of range.	Same as previous entry.
1065	Advisory	ICD test failed. Recommended actions: 1) Press 'Return to Setup Screen'. Re-test ICD.	Test failed – step type (test command received outside of Setup).	1) ICD status is set to Not Tested. 2) A "Return to Setup Screen" Button is provided in the advisory dialog.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
1072	Advisory	<p>ICD failed.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Press 'Return to Setup Screen'. 2) Remove and reconnect ICD, then re-test ICD. 3) If condition persists, replace ICD. 4) If condition persists and in surgery, stabilize the eye then restart system. 5) If condition persists after restart, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Open circuit detected before firing handpiece.	<p>1) ICD status is set to Not Tested.</p> <p>2) A "Return to Setup Screen" Button is provided in the advisory dialog.</p>
1073	Advisory	Same as previous entry.	Short circuit detected before firing handpiece.	Same as previous entry.
1074	Advisory	Same as previous entry.	Power out of range.	Same as previous entry.
1075	Advisory	Same as previous entry.	Boost supply is out of range.	Same as previous entry.
1076	Advisory	Same as previous entry.	Power Good is not ready.	Same as previous entry.
1099	Advisory	<p>Capsulotomy is not supported.</p> <p>Recommended actions: Select a different procedure or remove the Capsulotomy step.</p>	<p>Calibration data not valid.</p> <p>Note: This Advisory is displayed if Capsulotomy isn't supported (see SRS «542970») and the user either 1) selects a procedure that includes a Capsulotomy step, or 2) adds a Capsulotomy step to the current procedure, or 3) presses the Test ICD Button.</p>	The handpiece cannot be tested and the handpiece status is always Not Ready.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
POWER CONTROL MECHANISM – 11XX				
1101	Warning	<p>Mechanism power control error.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye. 2) Press Standby Switch for 5 seconds to shutdown system. 3) Restart system. 4) If condition persists, note Warning number and contact Alcon Technical Services. <p>Alcon Technical Services <Contact Info System Setting></p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	<p>Note: This Warning can't be dismissed by the user.</p>
1103	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
1106	Warning	Same as previous entry.	Command range error.	Same as previous entry.
1149	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.
1150	Advisory	<p>Backup power service needed.</p> <p>System will shut down immediately if AC Power is lost.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) You may proceed with surgery. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Battery is missing, disconnected or discharged (open or shorted cells).</p>	None

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
1151	Advisory	<p>Backup power temporarily unavailable. Battery is recharging.</p> <p>System will shut down immediately if AC Power is lost.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) You may proceed with surgery. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Battery is low and recharging.</p> <p>Note: this advisory occurs only at system startup.</p>	None.
1153	Advisory	<p>Backup power unavailable.</p> <p>System will shut down immediately if AC Power is lost.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) You may proceed with surgery. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Battery temperature out of range while operating on AC power.	After this Advisory is generated once, it isn't generated again until the Console is rebooted.
1154	Advisory	Same as previous entry.	Battery current sensor bad.	None
1155	Advisory	N/A	Battery load is bad or battery voltage is too low to use load.	The event is saved in the Event Log but the advisory is not displayed to the user.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
1156	Advisory	<p>Backup power unavailable.</p> <p>System will shut down immediately if AC Power is lost.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) You may proceed with surgery. 2) If condition persists, note Advisory number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Battery charger bad.	None
WIRELESS MECHANISM – 12XX				
1201	Warning	<p>Wireless features not available.</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Mechanism timeout error.</p> <p>Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.</p>	None
1203	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
1205	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
1206	Warning	Same as previous entry.	Command range error.	Same as previous entry.
1220	Warning	Same as previous entry.	Modem error.	Same as previous entry.
1221	Warning	Same as previous entry.	Persistent settings bad CRC.	Same as previous entry.
1226	Warning	Same as previous entry.	Host fault	Same as previous entry.
1227	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
1228	Warning	Same as previous entry.	Host range error.	Same as previous entry.
1244	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
1245	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
1246	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
1249	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
1250	Advisory	Wireless channel is already in use by another Centurion console. Recommended actions: 1) Open the System Settings dialog and change the Wireless Channel.	Channel conflict	This advisory is suppressed while a wired footswitch is connected and a HUD (SGS) is not connected. (This avoids a nuisance advisory.)
TONE MECHANISM – 13XX				
1301	Warning	Fluidics and Coagulation not available. Recommended actions: 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Mechanism timeout error. Note: This Warning is generated by the Host based on 1) absence of communication or 2) Status Mode = Not Configured.	None
1303	Warning	Same as previous entry.	Mechanism software error.	Same as previous entry.
1305	Warning	Same as previous entry.	Configuration range error.	Same as previous entry.
1306	Warning	Same as previous entry.	Command range error.	Same as previous entry.
1326	Warning	Same as previous entry.	Host fault	Same as previous entry.
1327	Warning	Same as previous entry.	Host timeout.	Same as previous entry.
1328	Warning	Same as previous entry.	Host range error.	Same as previous entry.
1329	Warning	Same as previous entry.	Footswitch mechanism fault.	Same as previous entry.
1330	Warning	Same as previous entry.	Footswitch mechanism timeout.	Same as previous entry.
1331	Warning	Same as previous entry.	Footswitch mechanism range error.	Same as previous entry.
1344	Warning	Same as previous entry.	Power Control mechanism fault.	Same as previous entry.
1345	Warning	Same as previous entry.	Power Control mechanism timeout.	Same as previous entry.
1346	Warning	Same as previous entry.	Power Control mechanism range error.	Same as previous entry.
1349	Warning	Same as previous entry.	Multifunction subsystem fault.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
IA MECHANISM – 20XX				
2000	Warning	Fluidics, Vitrectomy, and Coagulation not available. Recommended actions: 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Reference voltage out of range.	Same action as Fluidics Warnings, Vit Warnings, and Coag Warnings.
2001	Warning	Same as previous entry.	Subsystem timeout error. Note: This Warning is generated by the Host based on absence of communication.	Same as previous entry.
2002	Warning	Same as previous entry.	FlexRay error.	Same as previous entry.
2003	Warning	Same as previous entry.	Subsystem software error.	Same as previous entry.
2004	Warning	Same as previous entry.	24V supply out of range. 12V supply out of range. 1.2V supply out of range. 3.3V supply out of range. 5.0V supply out of range.	Same as previous entry.
2005	Warning	Same as previous entry.	Auxiliary reference out of range.	Same as previous entry.
2006	Warning	Same as previous entry.	Command range error.	Same as previous entry.
2015	Warning	Fluidics, Vitrectomy, and Coagulation not available. Recommended actions: 1) Restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Incompatible hardware. Note: This fault occurs only at system startup.	Same as previous entry.

Table 4-3

EVENT CODES

Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
GENERATOR MECHANISM – 21XX				
2100	N/A	<p>Ultrasonics, Capsulotomy, and AutoSert not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	Reference voltage out of range.	Same action as Ultrasonics Warnings, AutoCap Warnings, and IOL Warnings.
2101	Warning	Same as previous entry.	<p>Subsystem timeout error.</p> <p>Note: This Warning is generated by the Host based on absence of communication.</p>	Same as previous entry.
2102	Warning	Same as previous entry.	FlexRay error.	Same as previous entry.
2103	Warning	Same as previous entry.	Subsystem software error.	Same as previous entry.
2104	Warning	Same as previous entry.	<p>24V supply out of range.</p> <p>12V supply out of range.</p> <p>1.2V supply out of range.</p> <p>3.3V supply out of range.</p> <p>5.0V supply out of range.</p>	Same as previous entry.
2106	Warning	Same as previous entry.	Command range error.	Same as previous entry.
2115	Warning	<p>Ultrasonics, Capsulotomy, and AutoSert not available.</p> <p>Recommended actions:</p> <ol style="list-style-type: none"> 1) Restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. <p>See the About Dialog for Alcon Technical Services contact information.</p>	<p>Incompatible hardware.</p> <p>Note: This fault occurs only at system startup.</p>	Same as previous entry.

Table 4-3

EVENT CODES

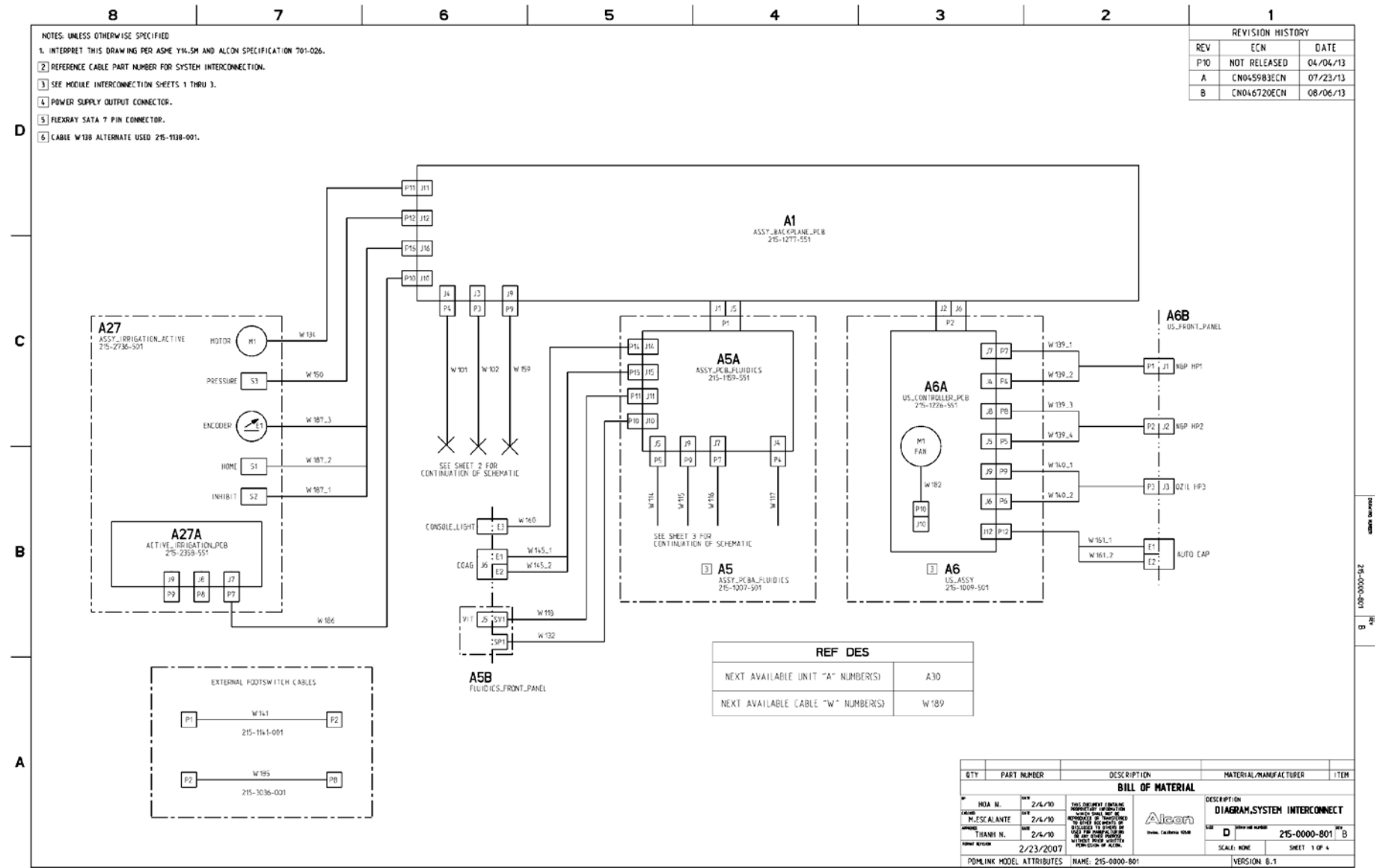
Fluidics-1XX; Ultrasonics-2XX; Footswitch-3XX; Host-4XX; VIT-5XX; Coag-6XX; IV Pole-7XX; IOL-8XX; Pump-9XX; AutoCap-10XX; Power-11XX; Wireless-12XX; Tone-13XX; IA-20XX; Generator-21XX; Multifunction-22XX

Event Code	Event Type	Message to User	Detail	System Action
MULTIFUNCTION SUBSYSTEM – 22XX				
2200	Warning	Footswitch, IV Pole, Pump, Audio, and Operator Control not available. Recommended actions: 1) If in surgery, stabilize the eye then restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Reference voltage out of range.	Same action as Footswitch Warnings, IV Pole Warnings, Pump Warnings, Audio Warnings, and Operator Control Warnings.
2201	Warning	Same as previous entry.	Subsystem timeout error. Note: This Warning is generated by the Host based on absence of communication.	Same as previous entry.
2202	Warning	Same as previous entry.	FlexRay error.	Same as previous entry.
2203	Warning	Same as previous entry.	Subsystem software error.	Same as previous entry.
2204	Warning	Same as previous entry.	24V supply out of range. 1.2V supply out of range. 3.3V supply out of range. 5.0V supply out of range.	Same as previous entry.
2206	Warning	Same as previous entry.	Command range error.	Same as previous entry.
2215	Warning	Footswitch, IV Pole, Pump, Audio, and Operator Control not available. Recommended actions: 1) Restart system. 2) If condition persists after restart, note Warning number and contact Alcon Technical Services. See the About Dialog for Alcon Technical Services contact information.	Incompatible hardware. Note: This fault occurs only at system startup.	Same as previous entry.

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SECTION FIVE - SCHEMATICS

Figure 5-1 shows the system interconnect diagram for the *Centurion®* console.



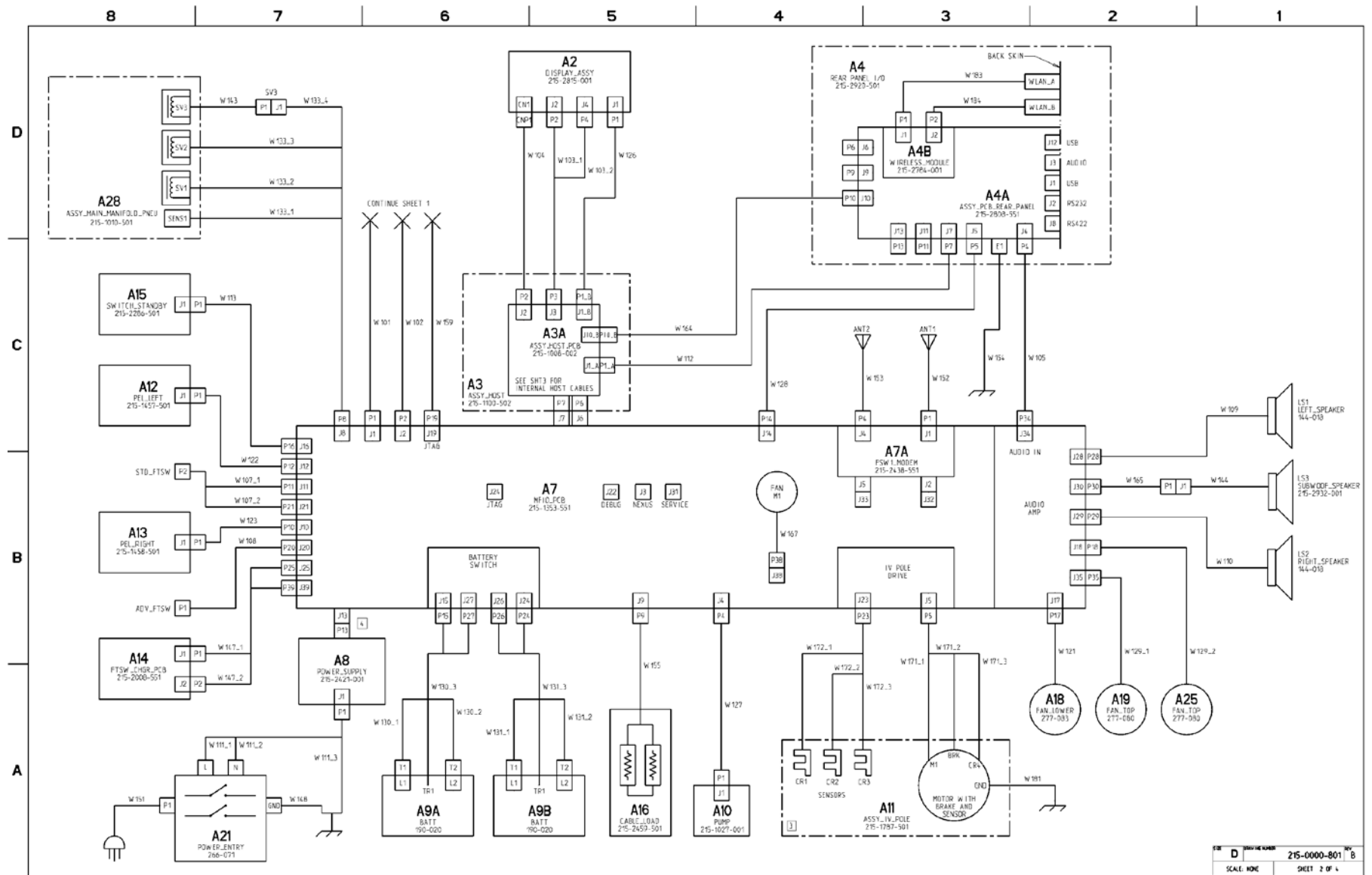


Figure 5-1 System Interconnect Diagram (sheet 2 of 4)

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5.2

FOR REFERENCE ONLY

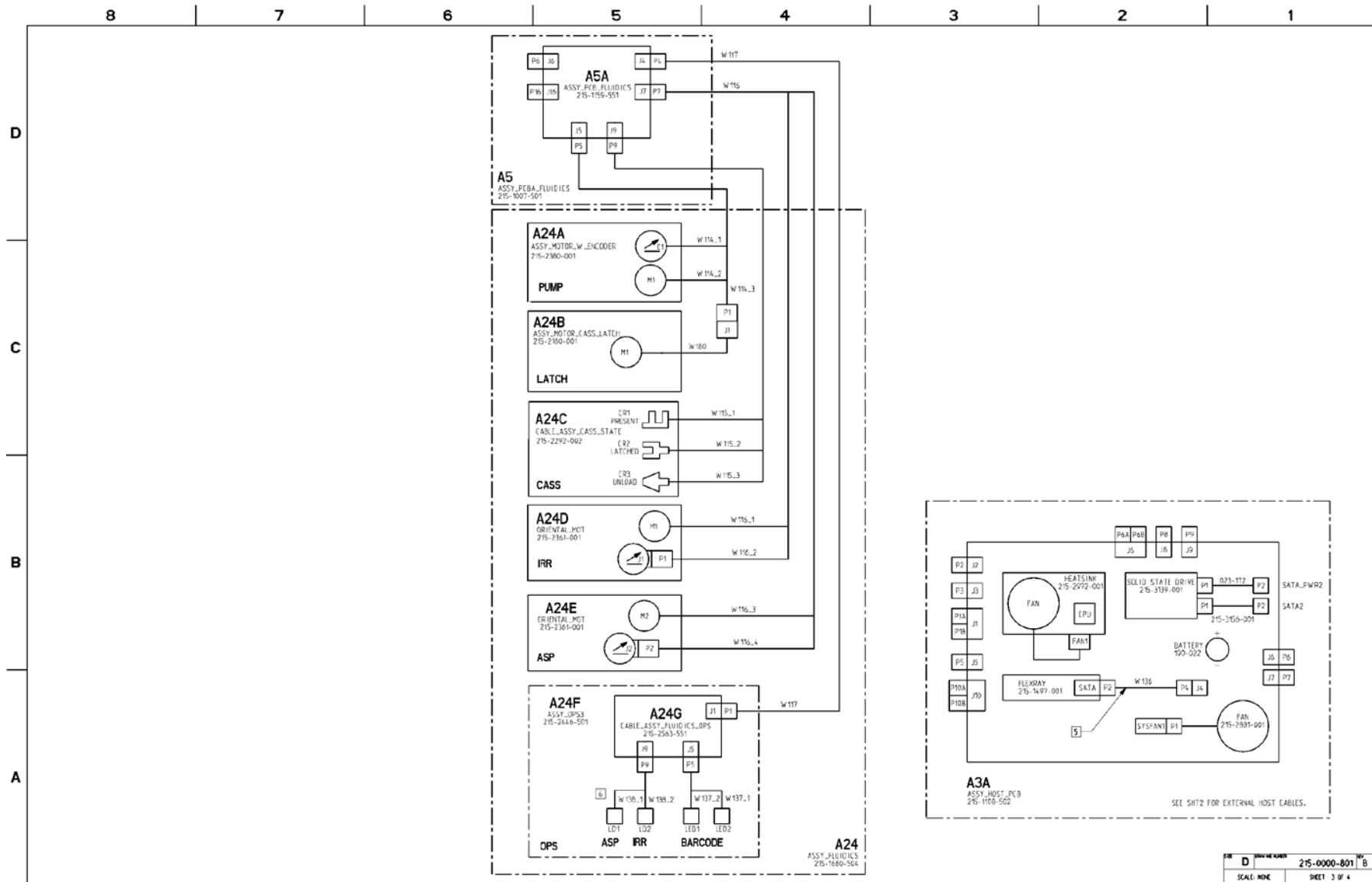


Figure 5-1 System Interconnect Diagram (sheet 3 of 4)

	8	7	6	5	4	3	2	1
CABLES								
D	REF DES	ALCON PART NUMBER	CONNECTOR REF DES		DESCRIPTION	COMMENTS	REF DES	ALCON PART NUMBER
			FROM MODULE/CONNECTOR	TO MODULE/CONNECTOR				
	W101	215-1101-001	A1P4	A7P1	ASSY CABLE 24V PWR BK PLN W101		W108	215-1160-001
	W102	023-163	A1P3	A7P2	CABLE ASSY EXTERNAL DATA 24IN		W150	215-1150-001
	W103.1	215-1103-001	A1P3	A2P2	ASSY CABLE POWER DISPLAY W103		W151	023-139
	W103.2	215-1103-001	A1P3	A2P4	ASSY CABLE POWER DISPLAY W103		W152	023-144
	W104	215-1104-001	A2P1	A3P2	ASSY CABLE VIDEO DISPLAY W104		W153	023-144
	W105	215-1105-001	A7P3W	A4A1P4	CABLE ASSY AUDIO EXT W105		W154	215-2150-001
	W107.1	215-1107-001	STD_FTSW P2	A7P11	ASSY CABLE FTSW STD INTF W107		W155	215-2108-001
	W107.2	215-1107-001	STD_FTSW P2	A7P21	ASSY CABLE FTSW STD INTF W107		W159	023-131
	W108	215-1108-001	ADV_FTSW P1	A7P22	ASSY CABLE FTSW ADV INTF W108		W160	215-2176-001
	W109	215-1110-001	LS1LS1	A7P23	CABLE ASSY SPEAKER		W161.1	215-1145-001
	W110	215-1110-001	LS2LS1	A7P29	CABLE ASSY SPEAKER		W161.2	215-1145-001
	W111.1	215-3002-001	A8P1	A7L1	CABLE ASSY POWER ENTRY W111		W164	023-162
	W111.2	215-3002-001	A8P1	A7L1	CABLE ASSY POWER ENTRY W111		W165	215-2193-001
	W111.3	215-3002-001	A8P1	CHASSIS_10ND	CABLE ASSY POWER ENTRY W111		W167	215-2160-001
	W112	023-167	A3P1.A	A4A P7	CABLE ASSY ASB 2.0. A PLUG IN		W171.1	215-2131-001
	W113	215-1113-001	A5P1	A7P16	CABLE ASSY STANDBY SWITCH W113		W171.2	215-2131-001
	W114.1	215-2497-001	A5A P5	A2A E1	CABLE ASSY FLUIDICS MOTOR W114		W171.3	215-2131-001
	W114.2	215-2497-001	A5A P5	A2A M1	CABLE ASSY FLUIDICS MOTOR W114		W172.1	215-2462-001
	W114.3	215-2497-001	A5A P5	A2A P1	CABLE ASSY FLUIDICS MOTOR W114		W172.2	215-2462-001
	W115.1	215-3232-001	A5A P9	A2A C1	CABLE ASSY LATCH MOTOR W115		W172.3	215-2462-001
	W115.2	215-3232-001	A5A P9	A2A C2	CABLE ASSY LATCH MOTOR W115		W180	215-2160-001
	W115.3	215-3232-001	A5A P9	A2A C3	CABLE ASSY LATCH MOTOR W115		W181	215-2162-001
	W116.1	215-2191-001	A5A P7	A2A M1	CABLE ASSY FLUIDICS CAS MTRS W116		W182	215-2164-001
	W116.2	215-2191-001	A5A P7	A2A P1	CABLE ASSY FLUIDICS CAS MTRS W116		W183	023-016
	W116.3	215-2191-001	A5A P7	A2A P2	CABLE ASSY FLUIDICS CAS MTRS W116		W184	021-016
	W116.4	215-2191-001	A5A P7	A2A P3	CABLE ASSY FLUIDICS CAS MTRS W116		W185	215-3036-001
	W117	215-2190-001	A5A P4	A2A E1	CABLE ASSY FLUIDICS DPS W117		W186	215-3042-001
	W118	215-1118-001	A5A P11	A5B S1	CABLE ASSY VIT DRV VALVE W118		W187.1	215-3063-001
	W121	215-2857-001	A7P17	A1B_FAN	CABLE ASSY FAN W121		W187.2	215-3063-001
	W122	215-1122-001	A7P17	A7P11	CABLE ASSY JEL W122		W187.3	215-3063-001
	W123	215-1122-001	A7P17	A7P11	CABLE ASSY JEL W123			
	W126	215-2386-001	A3P1.B	A2P1	CABLE ASSY ASB DISPLAY W126			
	W127	215-1127-001	A7P4	A10 P1	CABLE ASSY PNEUMATIC PUMP W127			
	W128	215-3005-001	A7P4	A4A P5	ASSY CABLE SERIAL W128			
	W129.1	215-1129-001	A7P35	A1B_FAN	CABLE ASSY FANS UPPER W129			
	W129.2	215-1129-001	A7P36	A25_FAN	CABLE ASSY FANS UPPER W129			
	W130.1	215-1130-001	A7P27	A9A T1	CABLE ASSY BACKUP BATT PWR W130			
	W130.2	215-1130-001	A7P27	A9A T2	CABLE ASSY BACKUP BATT PWR W130			
	W130.3	215-1130-001	A7P15	A9A T1	CABLE ASSY BACKUP BATT PWR W130			
	W131.1	215-1131-001	A7P26	A9B T1	CABLE ASSY BACKUP BATT PWR W131			
	W131.2	215-1131-001	A7P26	A9B T2	CABLE ASSY BACKUP BATT PWR W131			
	W131.3	215-1131-001	A7P26	A9B T1	CABLE ASSY BACKUP BATT PWR W131			
	W132	215-1132-001	A5A P10	A5B P1	CABLE ASSY VIT DRV SENSE W132			
	W133.1	215-1133-001	A7P8	A2B SENS1	CABLE ASSY MAIN MANIFOLD W133			
	W133.2	215-1133-001	A7P8	A2B SENS1	CABLE ASSY MAIN MANIFOLD W133			
	W133.3	215-1133-001	A7P8	A2B SENS2	CABLE ASSY MAIN MANIFOLD W133			
	W133.4	215-1133-001	A7P8	A2B J1	CABLE ASSY MAIN MANIFOLD W133			
	W134	215-1135-001	A2P11	A1P11	CABLE ASSY ACTIVE IRR W134			
	W136	215-2178-001	A3A P2	A3A P4	ASSY CABLE SATA STRAIGHT TO R/A			
	W137.1	215-1137-001	A2A P5	A2A P5	CABLE ASSY LED W137			
	W137.2	215-1137-001	A2A P5	A2A P5	CABLE ASSY LED W137			
	W138.1	215-1144-001	A2A P5	A2A P5	CABLE ASSY LASER W138	SEE NOTE 5		
	W138.2	215-1144-001	A2A P5	A2A P5	CABLE ASSY LASER W138	SEE NOTE 5		
	W139.1	215-2870-001	A6A P7	A6B P1	CABLE ASSY JUS HP			
	W139.2	215-2870-001	A6A P7	A6A P4	CABLE ASSY JUS HP			
	W139.3	215-2870-001	A6A P7	A6A P2	CABLE ASSY JUS HP			
	W139.4	215-2870-001	A6A P7	A6A P5	CABLE ASSY JUS HP			
	W140.1	215-2957-501	A6A P3	A6A P9	CABLE ASSY JUS HP W140			
	W140.2	215-2957-501	A6A P3	A6A P6	CABLE ASSY JUS HP W140			
	W141	215-1141-001	FT_SW1P1	FT_SW1P2	CABLE ASSY EXT FOOTSWITCH W141			
	W143	215-1143-001	A2B SENS1	A2B P1	CABLE ASSY SV3 VALVE W143			
	W144	215-2193-001	LS1LS1	LS1LS2	CABLE ASSY SUB WIDEPER W144			
	W145.1	215-1145-001	A5A P15	A5B E1	ASSY CABLE COAG PUP CONN W145/W161			
	W145.2	215-1145-001	A5A P15	A5B F2	ASSY CABLE COAG PUP CONN W145/W161			
	W147.1	215-2178-001	A1A P1	A7P25	ASSY CABLE FTSW CHGR W147			
	W147.2	215-2178-001	A1A P2	A7P39	ASSY CABLE FTSW CHGR W147			

Figure 5-1 System Interconnect Diagram (sheet 4 of 4)

SECTION SIX - PARTS LISTS AND DRAWINGS

Table 6-1 Parts Listing for *Centurion®* Console (215-0000-501)

DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
1	215-2920-501	ASSY,MODULE,WIRELESS	1	EA
2	023-163	CABLE ASSY,EXTERNAL,SATA 24IN	1	EA
3	023-167	CABLE ASSY,USB 2.0,PLUG 30IN	1	EA
4	043-030	TUBING,POLY,4.23MMX6.35MM BLUE	1	FT
5	807-024	SCREW,CAP HD SKT,M5X6 SST	6	EA
6	070-000	POST,BINDING,M6X15 BRS/NKL PLT	1	EA
7	807-026	SCREW,CAP HD SKT,M5X10 SST	8	EA
8	215-2863-501	ASSY,BASE	1	EA
9	215-2736-501	ASSY,IRRIGATION,ACTIVE	1	EA
10	215-1007-501	ASSY,PCB,FLUIDICS	1	EA
11	215-1009-501	ASSY,ULTRASOUND	1	EA
12	215-1010-501	ASSY,MAIN MANIFOLD,PNEU MOD	1	EA
13	215-2498-001	CABLE ASSY,TEST LOAD BTRY,W155	1	EA
14	215-1787-501	ASSY,POLE,IV	1	EA
15	215-1022-507	ASSY,DISPLAY,ARM	1	EA
16	215-1027-501	ASSY,AIR SOURCE,PNEU MOD	1	EA
17	215-1277-551	ASSY,PCB,BACKPLANE	1	EA
18	215-1036-501	ASSY,SURFACE,WORK	1	EA
20	215-2815-001	DISPLAY,TOUCH SCREEN,19IN LCD	1	EA
21	215-1091-502	ASSY,TRAY ARM	1	EA
22	215-1100-502	ASSY,MODULE,HOST ADVANTECH	1	EA
23	215-1101-001	CABLE ASSY,24V PWR BK PLN,W101	1	EA
24	215-1103-001	CABLE ASSY,POWER DISPLAY,W103	1	EA
25	215-1104-001	CABLE ASSY,VIDEO,DISPLAY W104	1	EA
26	215-1105-001	CABLE ASSY,AUDIO EXT,W105	1	EA
27	215-1107-001	CABLE ASSY,INTERFACE,FTSW W107	1	EA
28	215-1108-001	CABLE ASSY,8P,FTSW INTF W108	1	EA
29	215-2684-001	PAD,THERMAL COND,SOFT	1	EA
30	215-1110-001	CABLE ASSY,SPEAKER,RIGHT W10	2	EA
31	215-2386-001	CABLE ASSY,USB CANETICS,W126	1	EA
32	215-1113-001	CABLE ASSY,STANDBY SWITCH,W113	1	EA
33	215-2597-501	ASSY,SOUND SHIELD,PUMP MODULE	1	EA
34	215-2857-001	CABLE ASSY,FAN,LOWER W121	1	EA

DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
35	215-1122-001	CABLE ASSY,PEL MFIO,LEFT W122	1	EA
36	215-1130-001	CABLE ASSY,LT BACKUP BTRY,W130	1	EA
37	891-019	LUBRICANT,SEALANT,VALVE	0	EA
38	803-005	NUT,HEX,M5X0.8 SST	2	EA
39	215-2683-001	BRACKET,PANEL GROUND,LOWER	1	EA
40	215-3060-001	HANDLE ASSY,NGP	0	EA
41	215-3068-001	BRACKET,CONSOLE ANTENNA,LT/RT	2	EA
42	215-3134-001	GASKET,HANDLE MOUNT,FRONT LT	1	EA
43	215-3135-001	GASKET,HANDLE MOUNT,FRONT RT	1	EA
44	215-3111-501	ASSY,GASKET,VENT FRON	0	EA
45	215-2731-001	LABEL,NGP,IV POLE	1	EA
46	215-3136-001	GASKET,HANDLE MOUNT,REAR LT	1	EA
47	215-1229-001	BUMPER,LEFT,FRONT	0	EA
48	215-1278-001	BUMPER,FRONT	0	EA
49	215-1279-001	BUMPER,RIGHT,FRONT	0	EA
50	215-1280-001	BUMPER,LEFT,REAR	0	EA
51	215-1281-001	BUMPER,RIGHT,REAR	0	EA
52	215-2301-003	PANEL,FRONT,UPPER LABEL/SILKSR	0	EA
53	215-1323-003	PANEL,RIGHT,UPPER SILKSCREEN	0	EA
54	215-1324-001	PANEL,LOWER,LEFT	0	EA
55	215-2339-501	ASSY,PANEL,RIGHT LOWER	1	EA
56	026-029	CLAMP,CABLE,.250 DIA NYLON	1	EA
57	215-2346-001	PANEL,FRONT,FOOT HANDLE	0	EA
58	215-1353-551	ASSY,PCB,MFIO	1	EA
59	215-1358-001	BUTTON,RELEASE,WORK SURFACE	0	EA
60	026-061	CLAMP,CABLE,.500 DIA NYLON	1	EA
61	215-1322-003	PANEL,LEFT,UPPER SILKSCREEN	0	EA
62	690-1121	LABEL,GROUND	1	EA
63	215-1457-501	ASSY,PEL/IR,LEFT	1	EA
64	215-1458-501	ASSY,PEL/IR,RIGHT	1	EA
65	215-3100-501	ASSY,GASKET,TOP PANEL	0	EA
66	215-1477-001	CHUTE,AI	0	EA
67	215-2714-501	ASSY,COVER,RIGHT HANDLE	0	EA

* NOTE: Part numbers are for reference and may not be available as spare replacement parts.

Table 6-1 Parts Listing for Centurion® Console PN 215-0000-501 (continued)

DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
68	215-2715-501	ASSY,COVER,LEFT HANDLE	0	EA
69	215-2916-501	ASSY,DRAWER	0	EA
70	215-2477-001	COVER,HINGE,LEFT DISPLAY	0	EA
71	215-2475-001	BUCKET,DISPLAY	0	EA
72	215-1500-001	COVER,DISPLAY KNUCKLE,FRONT	0	EA
73	215-1501-001	COVER,DISPLAY KNUCKLE,REAR	0	EA
74	215-3137-001	GASKET,HANDLE MOUNT,REAR RT	1	EA
75	215-3221-501	ASSY,BATTERY/LABEL	2	EA
77	215-1528-001	BRACKET,CONNECTOR,FOOTSWITCH	1	EA
80	215-2124-501	ASSY,BRACKET,BATTERY STRAP	0	EA
81	215-1533-001	HOOK,FOOTSWITCH	0	EA
82	215-2895-001	GUIDE,FLUIDICS	1	EA
83	813-002	NUT,HEX,M4X0.7 W/LOCK WASHER	1	EA
84	215-1732-001	BRACKET,POWER ENTRY	1	EA
85	801-105	WASHER,FLAT,M4 SST W/BLK OXD	6	EA
86	023-101	CABLE,ETHERNET,8 COND 1.0M	1	EA
87	807-012	SCREW,CAP HD SKT,M4X6 SST	1	EA
88	215-1123-001	CABLE ASSY,PEL MFIO,RIGHT W122	1	EA
89	215-2969-001	BRACKET,MFIO FAN	1	EA
90	215-2960-001	CABLE ASSY,FAN,MFIO W167	1	EA
91	215-1784-001	SLIDE,LEVER DISC,6.5 TRAVEL	2	EA
92	215-1796-501	ASSY,FILTER BOX,FRONT UPPER	1	EA
93	215-1660-504	ASSY,FLUIDICS	1	EA
94	215-1833-501	ASSY,WORK SURFACE	0	EA
95	215-1837-501	ASSY,INSERT,DISPLAY NGP	0	EA
96	215-3005-001	CABLE ASSY,SERIAL,W128	1	EA
97	215-1860-001	PLATE,ADAPTER,2IN SPEAKER	2	EA
98	215-1866-001	HANDLE,WRAP,DISPLAY ELO	0	EA
99	215-1877-507	ASSY,BASE MOUNT,DISPLAY ARM	1	EA
100	215-1878-001	GASKET,HANDLE	4	EA
101	215-2476-001	COVER,HINGE,RIGHT DISPLAY	0	EA
102	215-2598-501	ASSY,PANEL,REAR UPPER	0	EA
103	215-2822-501	ASSY,PANEL,REAR LOWER	0	EA
104	215-2018-501	ASSY,PANEL,FRONT LOWER	0	EA
105	807-139	SCREW,CAP HD SKT,M2.0X3 SST	2	EA

DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
106	266-071	SWITCH,POWER ENTRY,10A/250VAC	1	EA
107	130-240	FUSE,10A,250V 5X20MM SLOW BLOW	2	EA
108	816-311	STANDOFF,M/F,M4.0X7X19 SST	3	EA
109	786-282	SCREW,CAP HD SKT,0-80X.188 SST	8	EA
110	215-2216-001	LABEL,PANEL,REAR INFO	1	EA
111	801-004	WASHER,FLAT,M4 SST	33	EA
112	801-005	WASHER,FLAT,M5 SST	14	EA
113	801-006	WASHER,FLAT,M6 SST	6	EA
114	801-039	WASHER,GRN/YEL.,241ID X.655 OD	1	EA
115	801-044	WASHER,FLAT,17X30MM	4	EA
116	800-103	WASHER,EXT LOCK,M3 SST	4	EA
117	807-007	SCREW,CAP HD SKT,M3X20 SST	4	EA
118	803-004	NUT,HEX,M4X0.7 SST	7	EA
119	803-043	NUT,HEX,M16X2 STEEL	4	EA
120	807-005	SCREW,CAP HD SKT,M3X12 SST	8	EA
121	807-184	SCREW,CAP HD SKT,M4X8 SST	2	EA
122	809-009	SCREW,BTN HD SKT,M4X16 SST	1	EA
123	807-013	SCREW,CAP HD SKT,M4X8 SST	17	EA
124	807-014	SCREW,CAP HD SKT,M4X10 SST	20	EA
125	807-015	SCREW,CAP HD SKT,M4X12 SST	31	EA
126	807-016	SCREW,CAP HD SKT,M4X16 SST	4	EA
127	807-017	SCREW,CAP HD SKT,M4X20 SST	8	EA
128	215-2778-001	CABLE ASSY,FTSW CHARGER W147	1	EA
129	807-023	SCREW,CAP HD SKT,M4X50 SST	6	EA
130	215-2226-001	SPOUT,DRAIN	1	EA
131	807-028	SCREW,CAP HD SKT,M5X16 SST	4	EA
132	807-041	SCREW,CAP HD SKT,M6X10 SST	4	EA
133	807-042	SCREW,CAP HD SKT,M6X12 SST	3	EA
134	807-043	SCREW,CAP HD SKT,M6X16 SST	12	EA
135	807-044	SCREW,CAP HD SKT,M6X20 SST	8	EA
136	807-047	SCREW,CAP HD SKT,M6X35 SST	4	EA
137	807-148	SCREW,CAP HD SKT,M2.5X6 SST	8	EA
139	215-1148-001	CABLE ASSY,PWR ENTRY GND,W148	1	EA
140	215-1743-501	ASSY,BUTTON,WORKSURFACE	0	EA
141	215-1883-001	DUCT,EXHAUST,HOST	1	EA

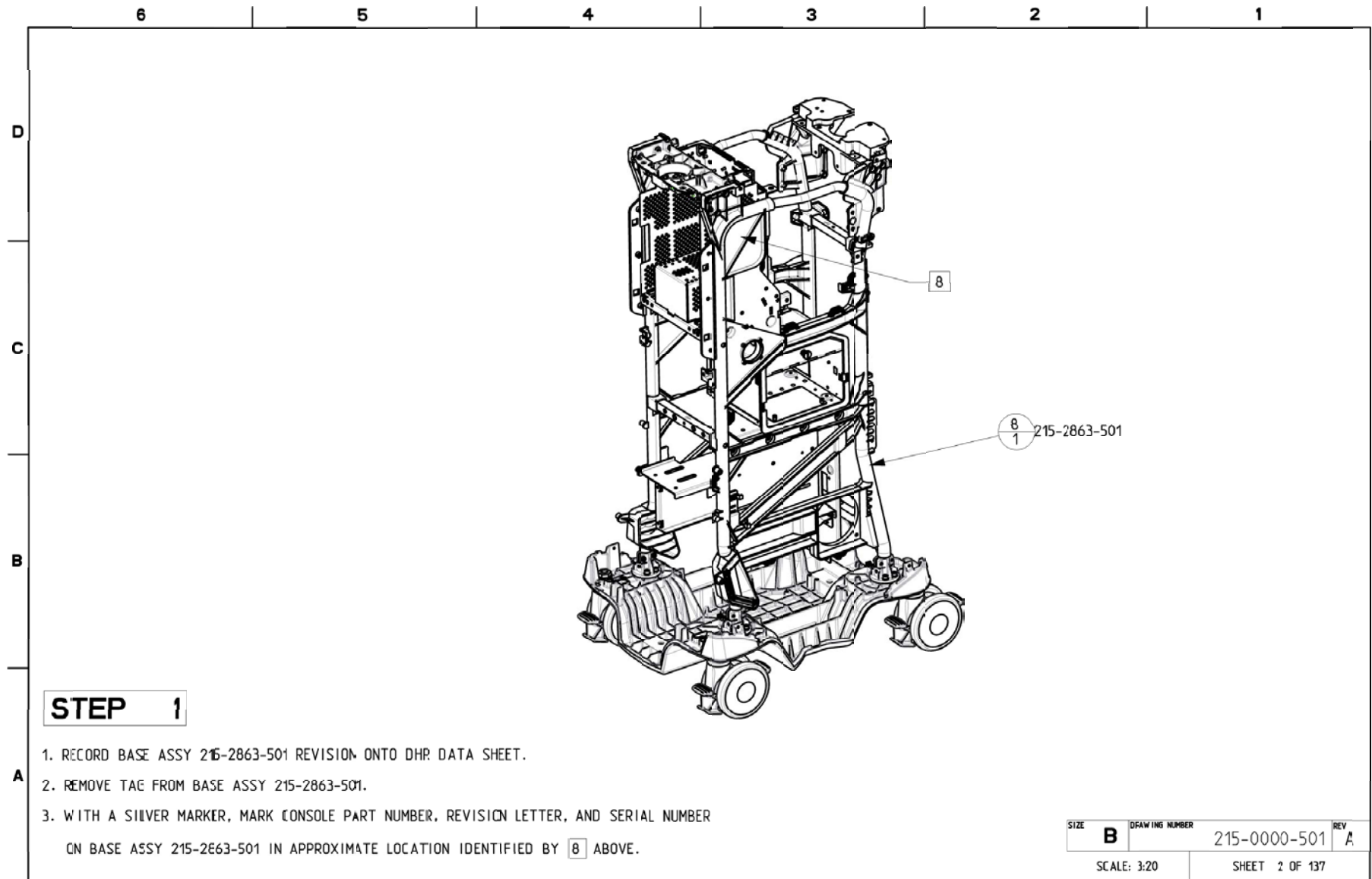
* NOTE: Part numbers are for reference and may not be available as spare replacement parts.

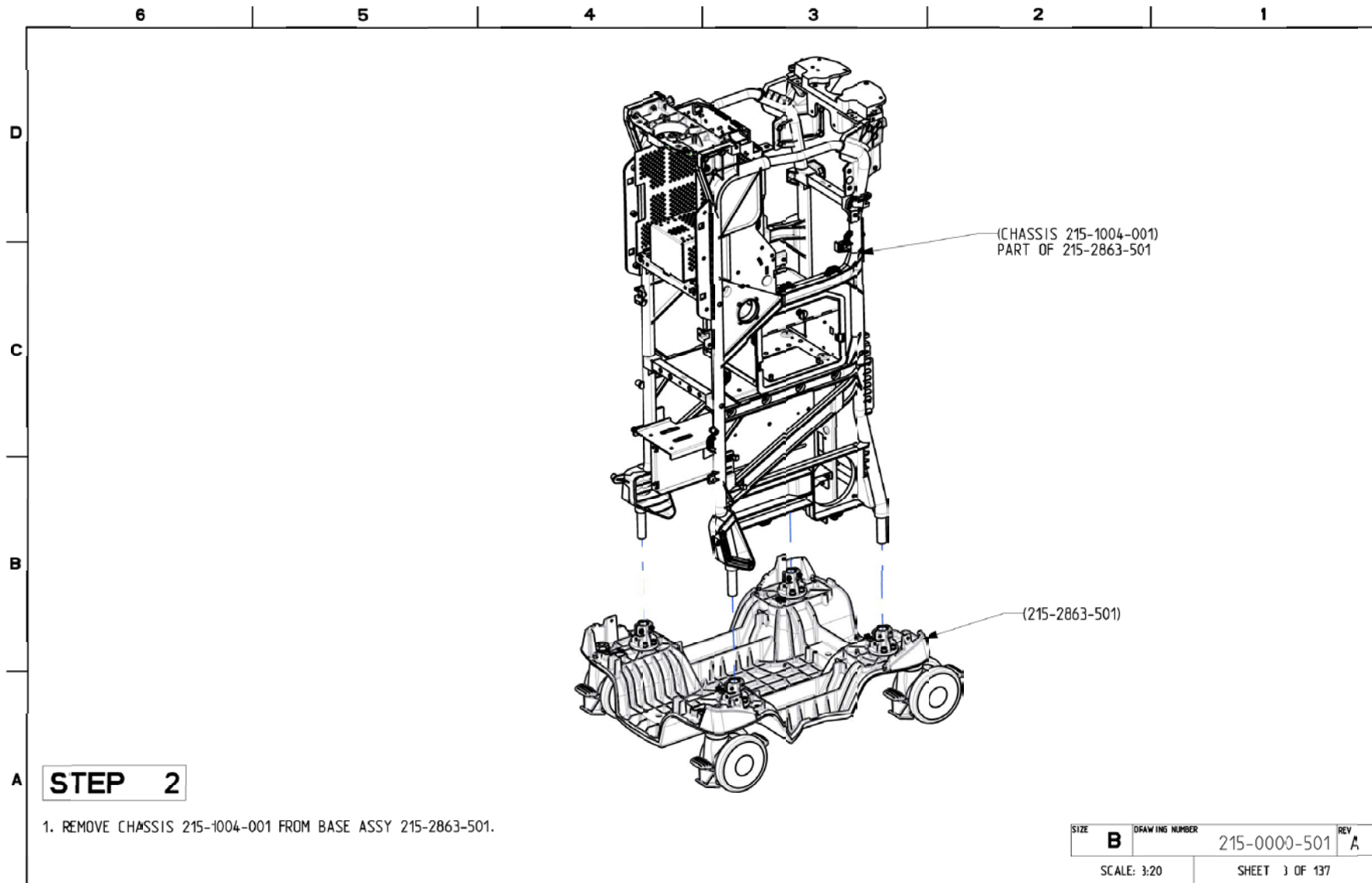
Table 6-1 Parts Listing for Centurion® Console PN 215-0000-501 (continued)

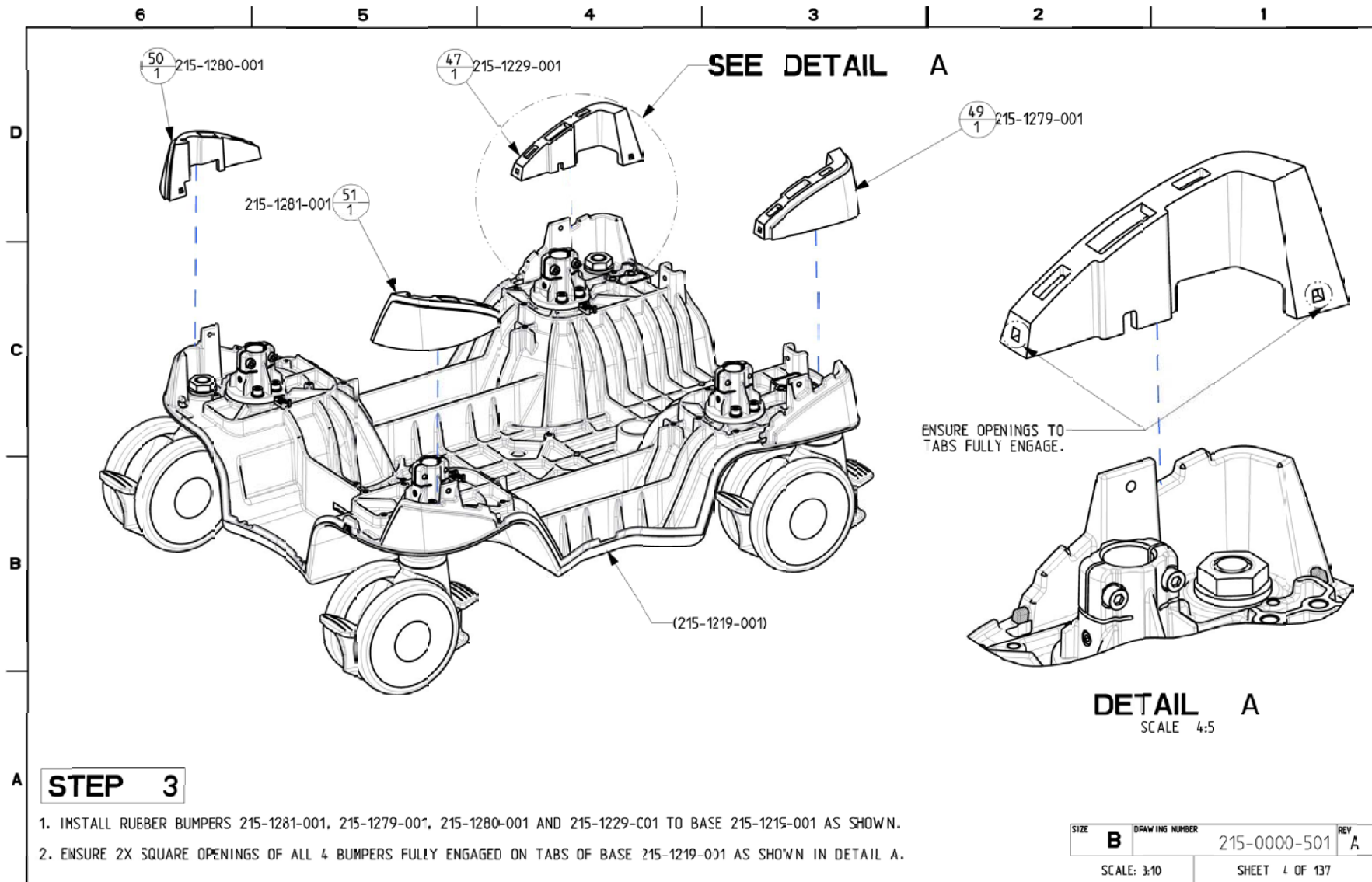
DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
142	892-042	ADHESIVE, THREADLOCKER, 242 BLUE	0	ML
143	807-018	SCREW, CAP HD SKT, M4X25 SST	12	EA
144	215-2656-001	BRACKET, MOUNTING	1	EA
145	023-139	CABLE, HOSPITAL GRADE, NEMA 5/15	1	EA
146	215-3002-001	CABLE ASSY, POWER ENTRY, W111	1	EA
148	215-2007-001	GASKET, FAN, PANEL LEFT	1	EA
149	027-009	CABLE TIE, 3.00X11.00L, NYLON	4	EA
151	215-2985-001	LABEL, CENTURION, WIRELESS	1	EA
152	797-004	WASHER, INT LOCK. 17X.34X.02 ZNC	2	EA
153	797-087	WASHER, INT LOCK. 26X.48X.03 SST	1	EA
154	800-004	WASHER, SPLITLOCK, M4 SST	2	EA
155	803-006	NUT, HEX, M6X1 SST	4	EA
156	809-006	SCREW, BTN HD SKT, M4X8 SST	7	EA
157	023-144	CABLE ASSY, MMCX FM914.4MM	2	EA
158	215-2786-001	SUPPORT ASSY, HANDLE, TOP RIGHT	2	EA
159	215-2421-001	POWER SUPPLY, MARTEK	1	EA
160	215-2787-001	SUPPORT ASSY, HANDLE, BTM RIGHT	1	EA
161	215-1141-001	CABLE ASSY, FOOTSWITCH, EXT W141	1	EA
162	043-038	TUBING, POLY., .375ODX.25ID BLUE	3	FT
163	893-725	FITTING, ADAPT., .375NPTFX.375OD	2	EA
164	026-147	CLAMP, CABLE, 0.25DIAX.375-CRES	3	EA
165	215-1131-001	CABLE ASSY, RT BACKUP BTRY, W131	1	EA
166	215-2788-001	SUPPORT ASSY, HANDLE, TOP LEFT	1	EA
167	215-2044-001	RETAINER, PCBA, FOOTSWITCH	4	EA

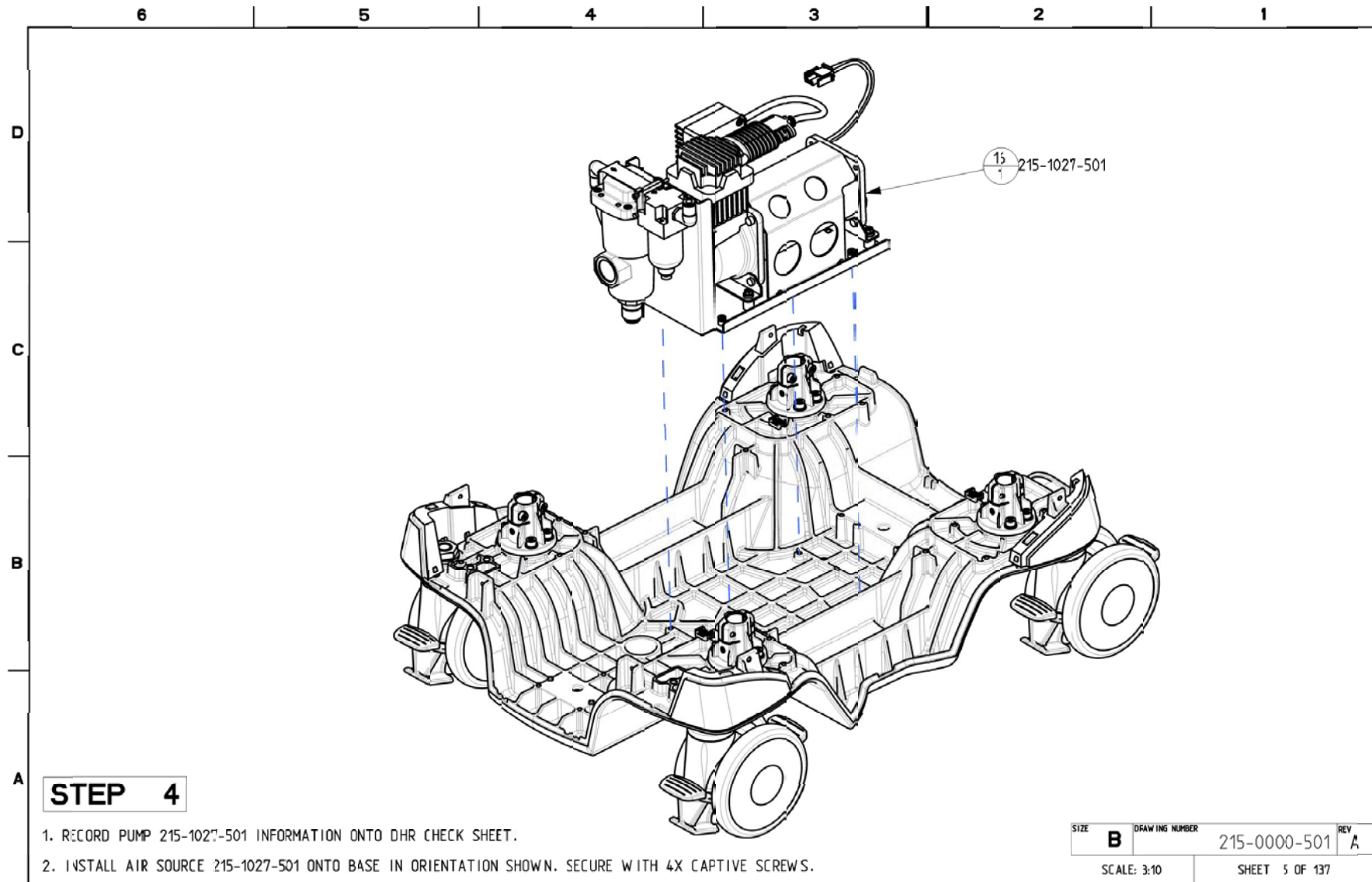
DRAWING NUMBER	COMPONENT PART NUMBER*	COMPONENT DESCRIPTION	QTY	UNITS
168	807-003	SCREW, CAP HD SKT, M3X8 SST	7	EA
169	027-003	CABLE TIE, .625X3.50L, NYLON	35	EA
170	592-053	LABEL, WINDOWS 7, EMBEDDED	1	EA
171	215-2789-001	SUPPORT ASSY, HANDLE, BTM LEFT	1	EA
172	215-2286-501	ASSY, SWITCH, STANDBY	1	EA
173	807-001	SCREW, CAP HD SKT, M3X5 SST	2	EA
174	764-032	LATCH, MAGNETIC, PUSH TO CLOSE	1	EA
175	215-2008-551	ASSY, PCB, COIL FTSW CHRGR	1	EA
177	215-2939-SSC	KIT, SSC, DISPLAY A	1	EA
178	215-2940-SSC	KIT, SSC, SKINS SMALL	1	EA
179	215-2941-SSC	KIT, SSC, FRAME PREP	1	EA
180	215-2943-SSC	KIT, SSC, SKINS LARGE	1	EA
181	215-2653-022	SOFTWARE, NGP, INSTAL_MEDIA B_36	0	EA
182	023-166	CABLE, ETHERNET, 8 COND 25.5IN	1	EA
183	892-395	ADHESIVE, SEALANT, LOCTITE 40479	0	EA
184	215-2915-001	STRAIN RELIEF, POWER CORD	1	EA
185	215-3141-001	GASKET, AI MODULE	1	EA
186	215-3056-001	GASKET, PHACO	3	EA
187	215-3057-001	GASKET, COAG	3	EA
188	215-3058-001	GASKET, LIGHT	1	EA
189	215-3154-001	GASKET, TRAY ARM, MOUNT	2	EA
190	215-3180-001	SPACER, GASKET, WORKSURFACE	1	EA
191	215-3165-001	GASKET, WORK SURFACE	1	EA
192	215-3172-001	GASKET, WORK SURFACE	1	EA

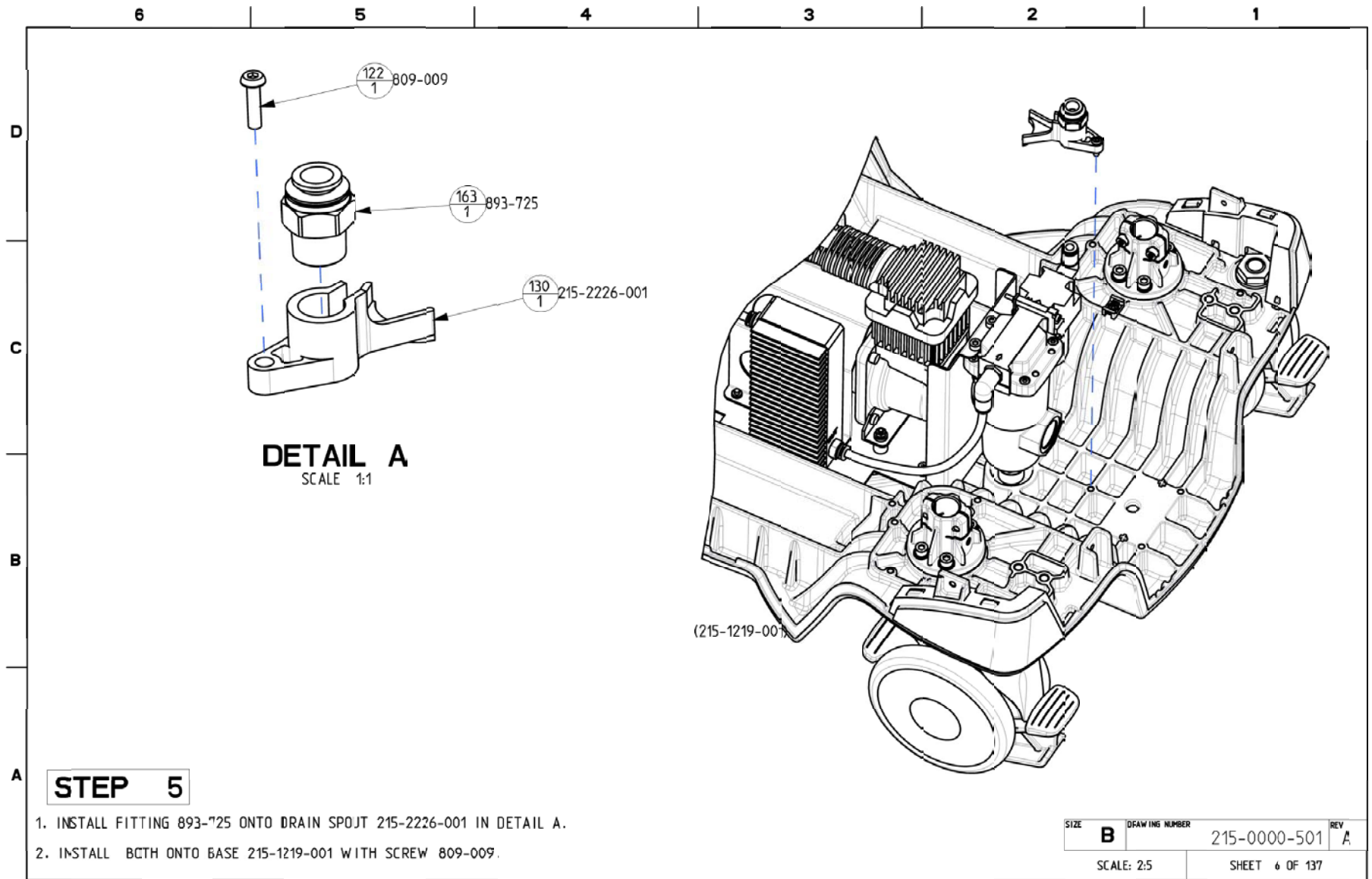
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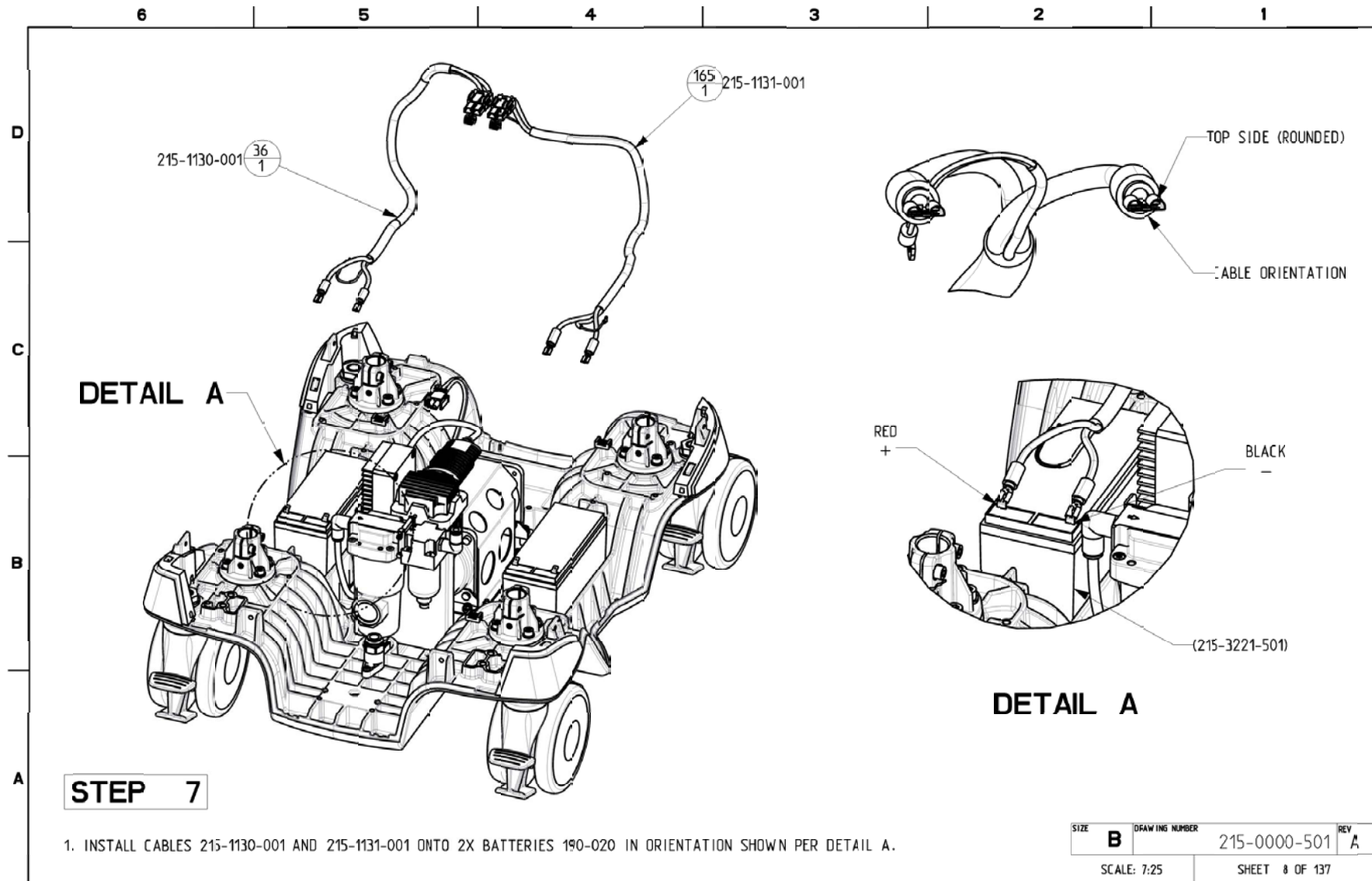


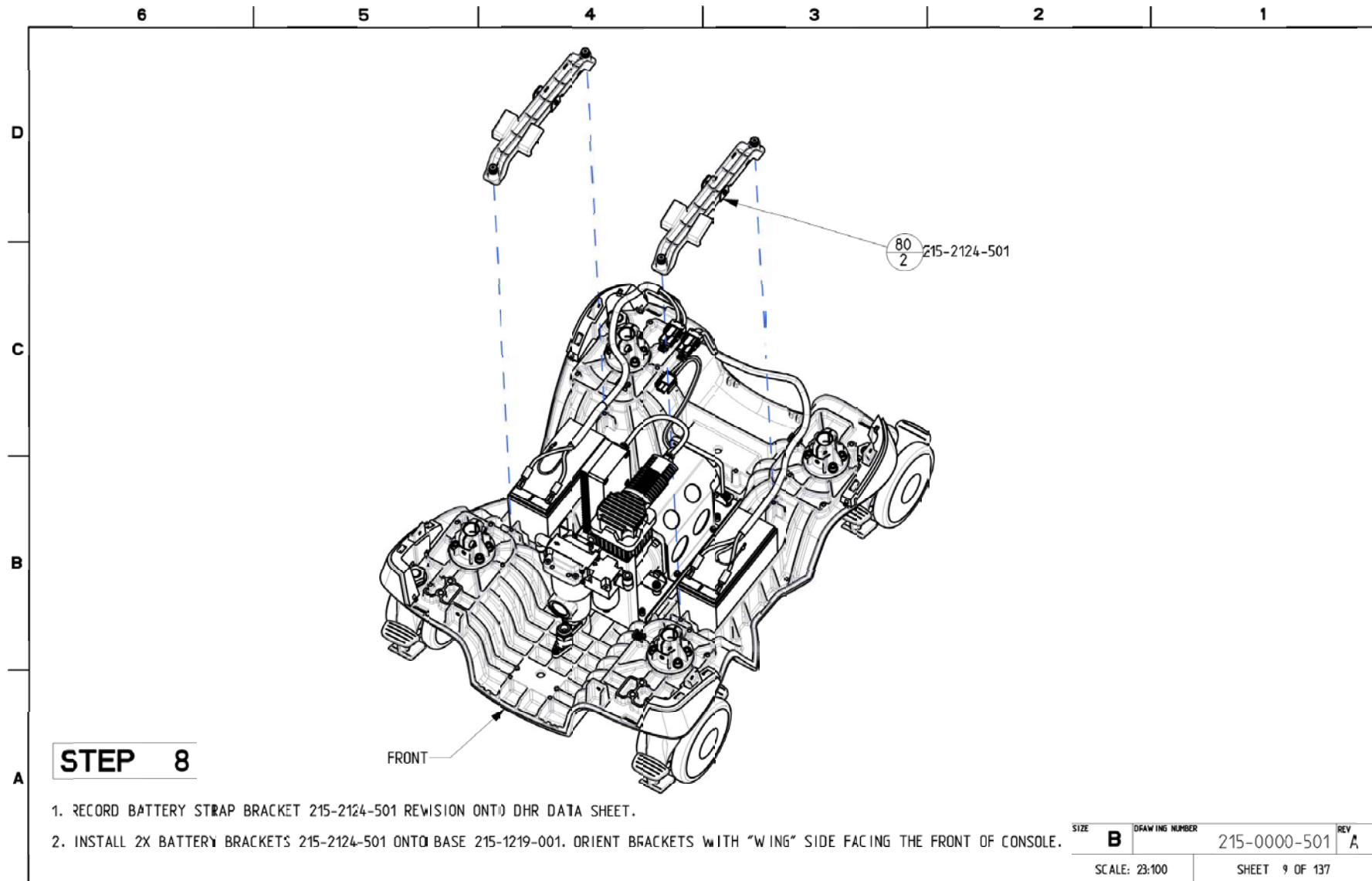


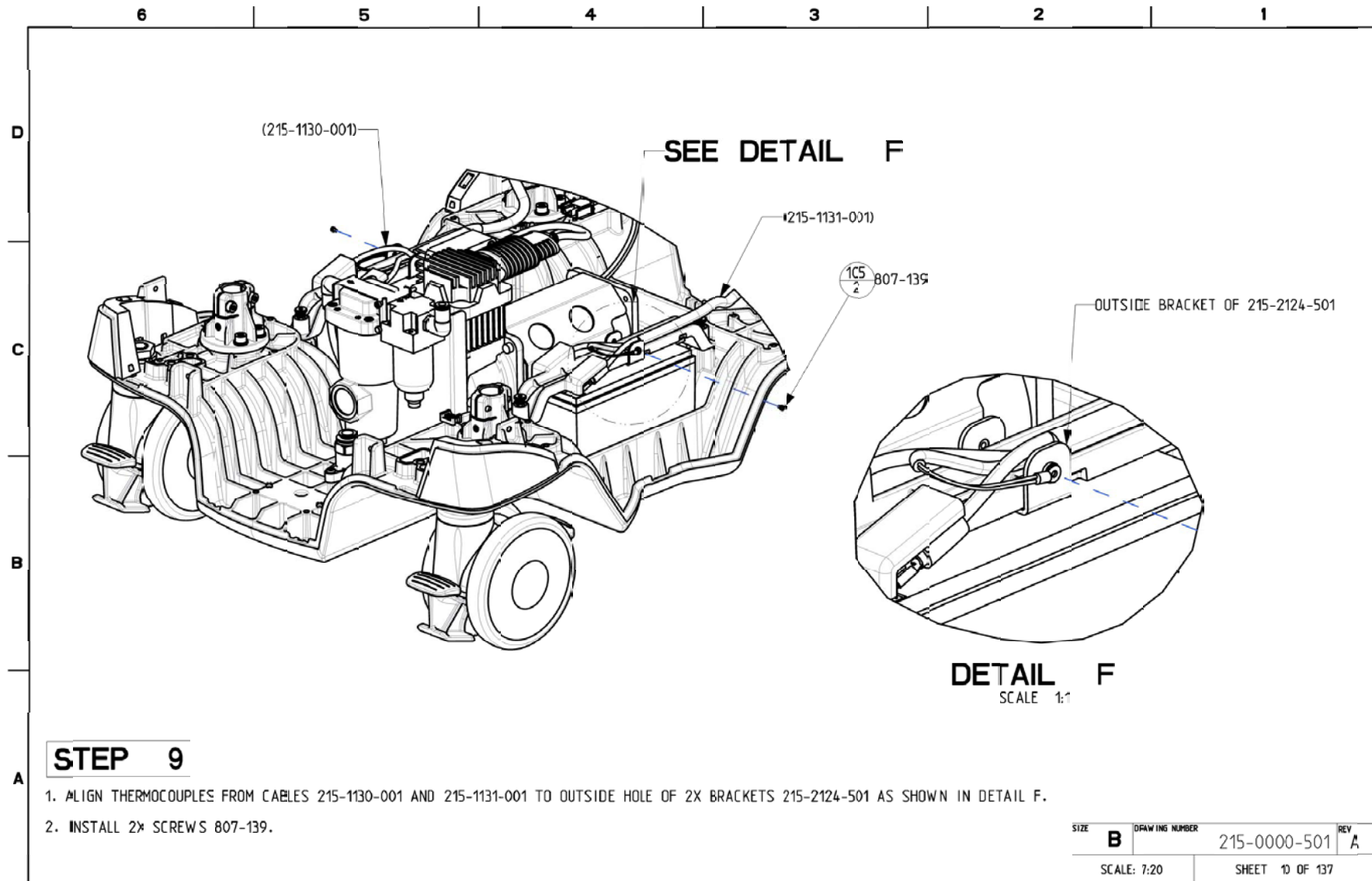


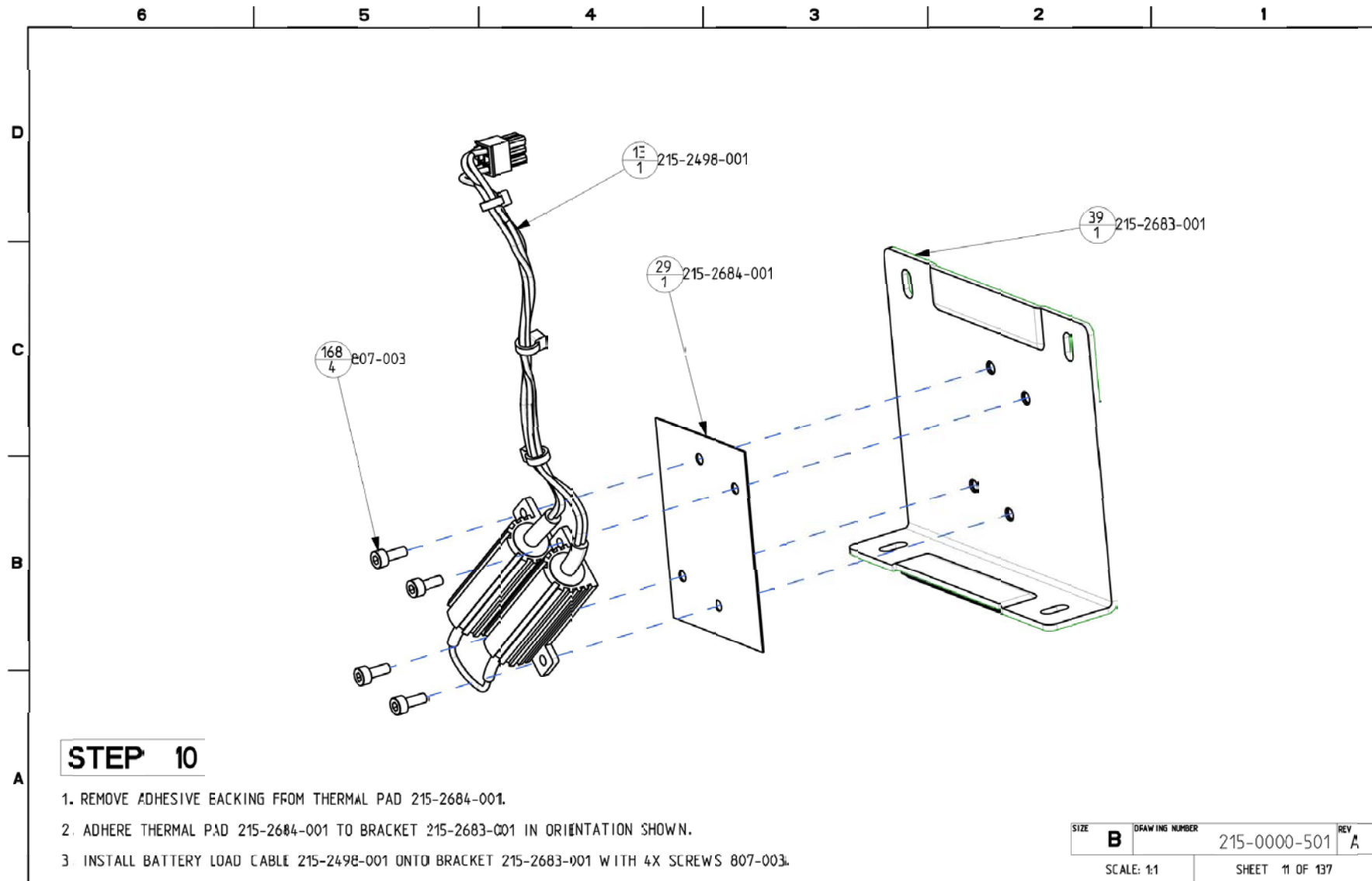


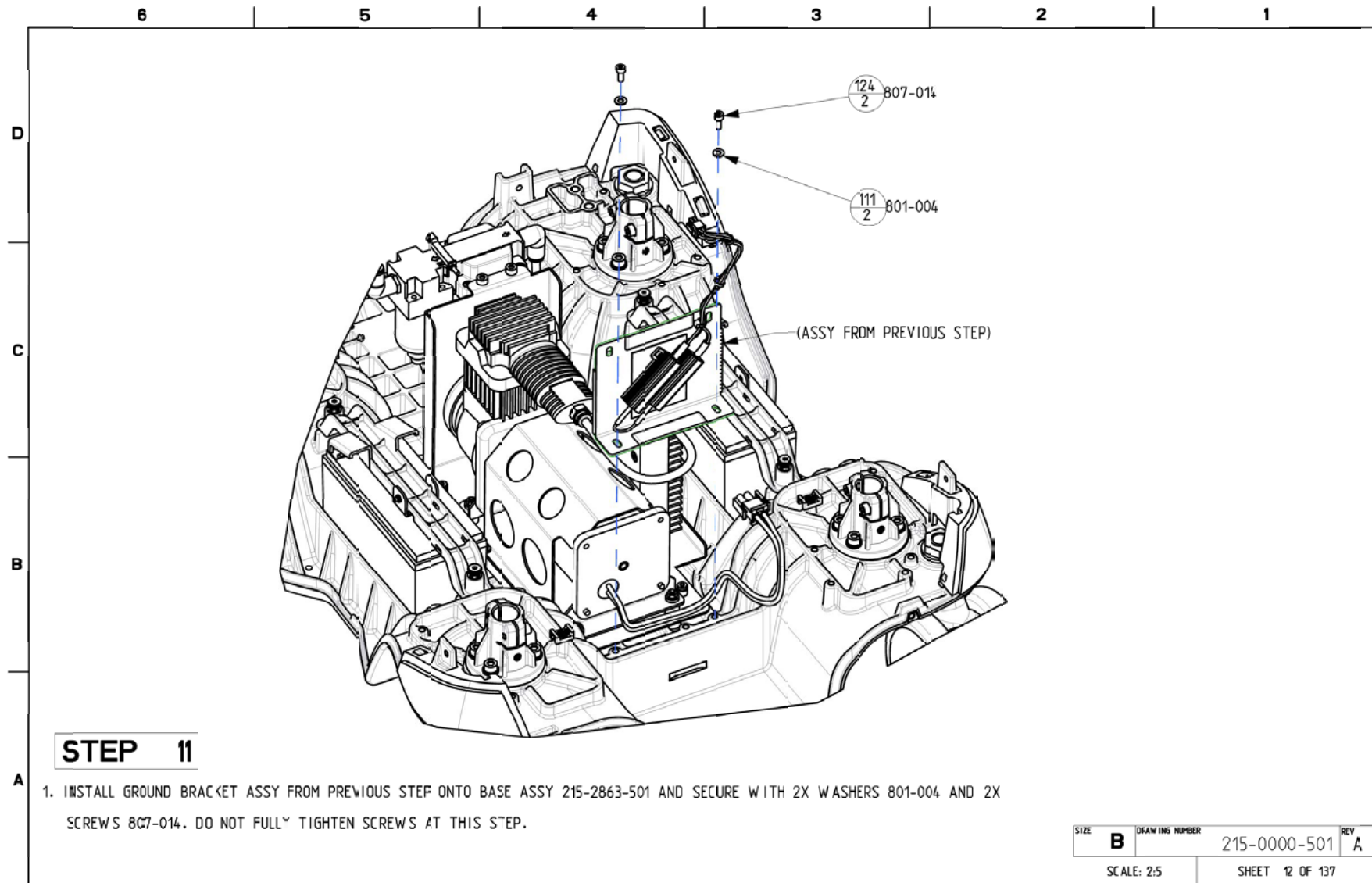


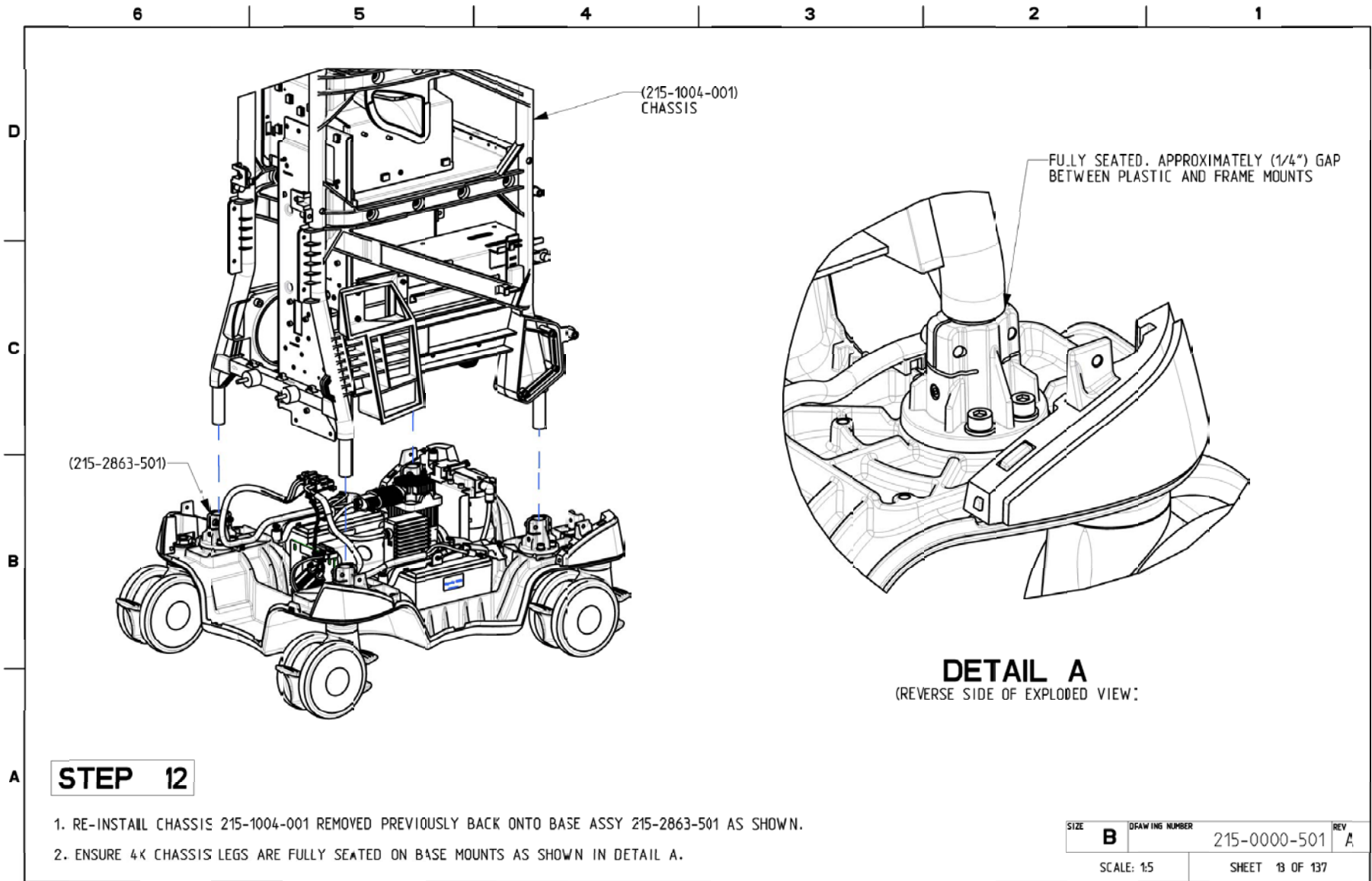


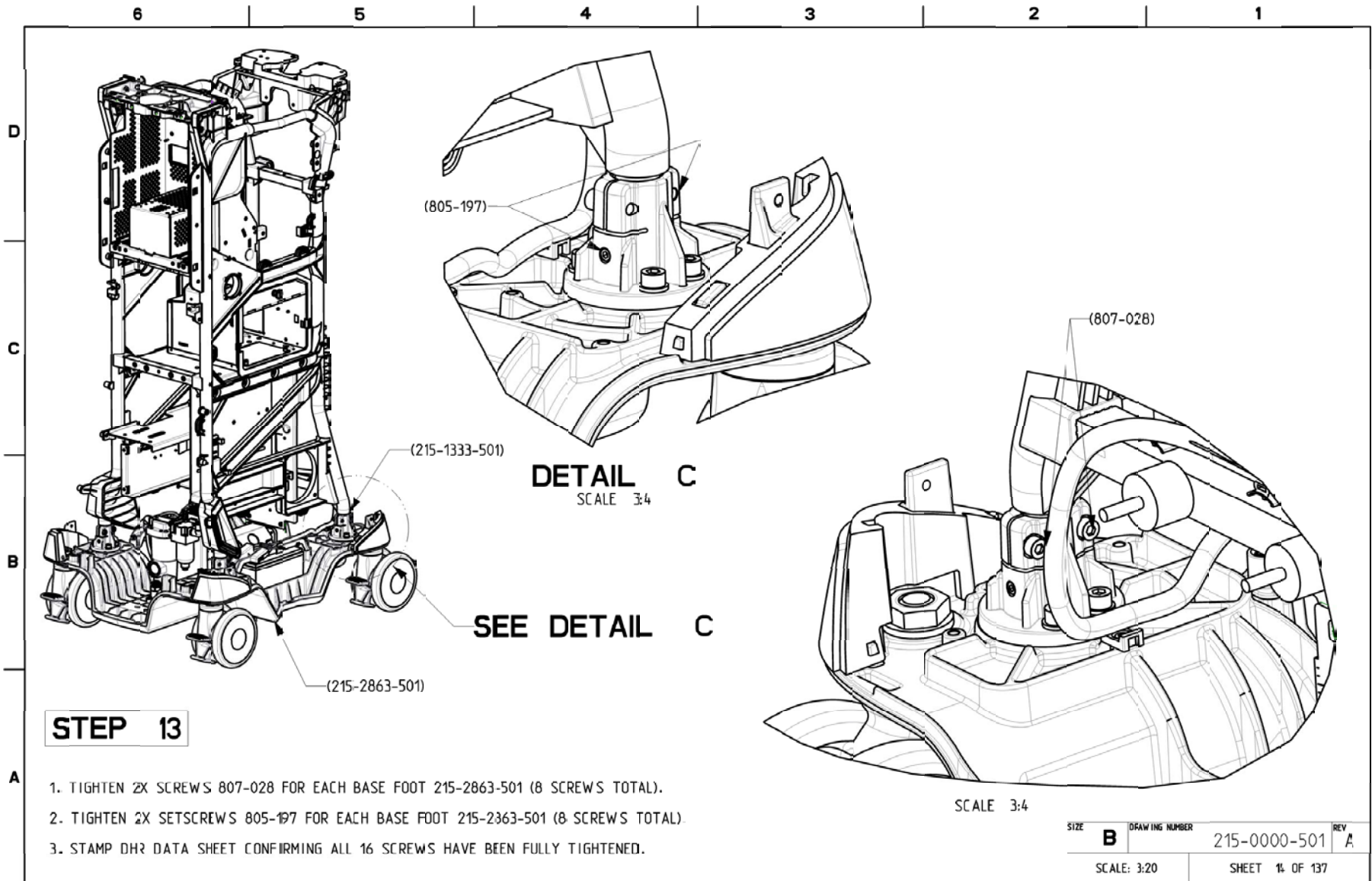


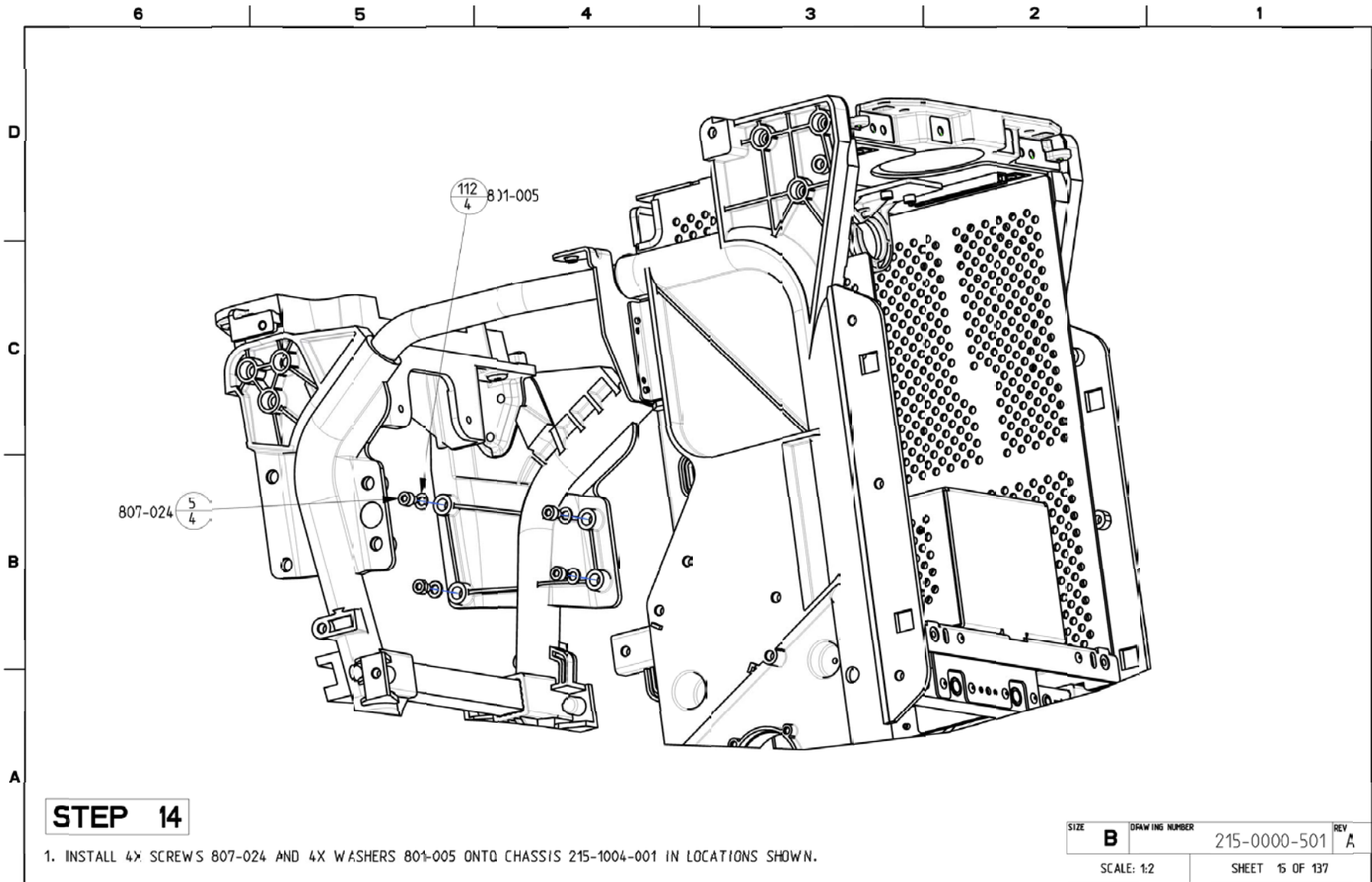


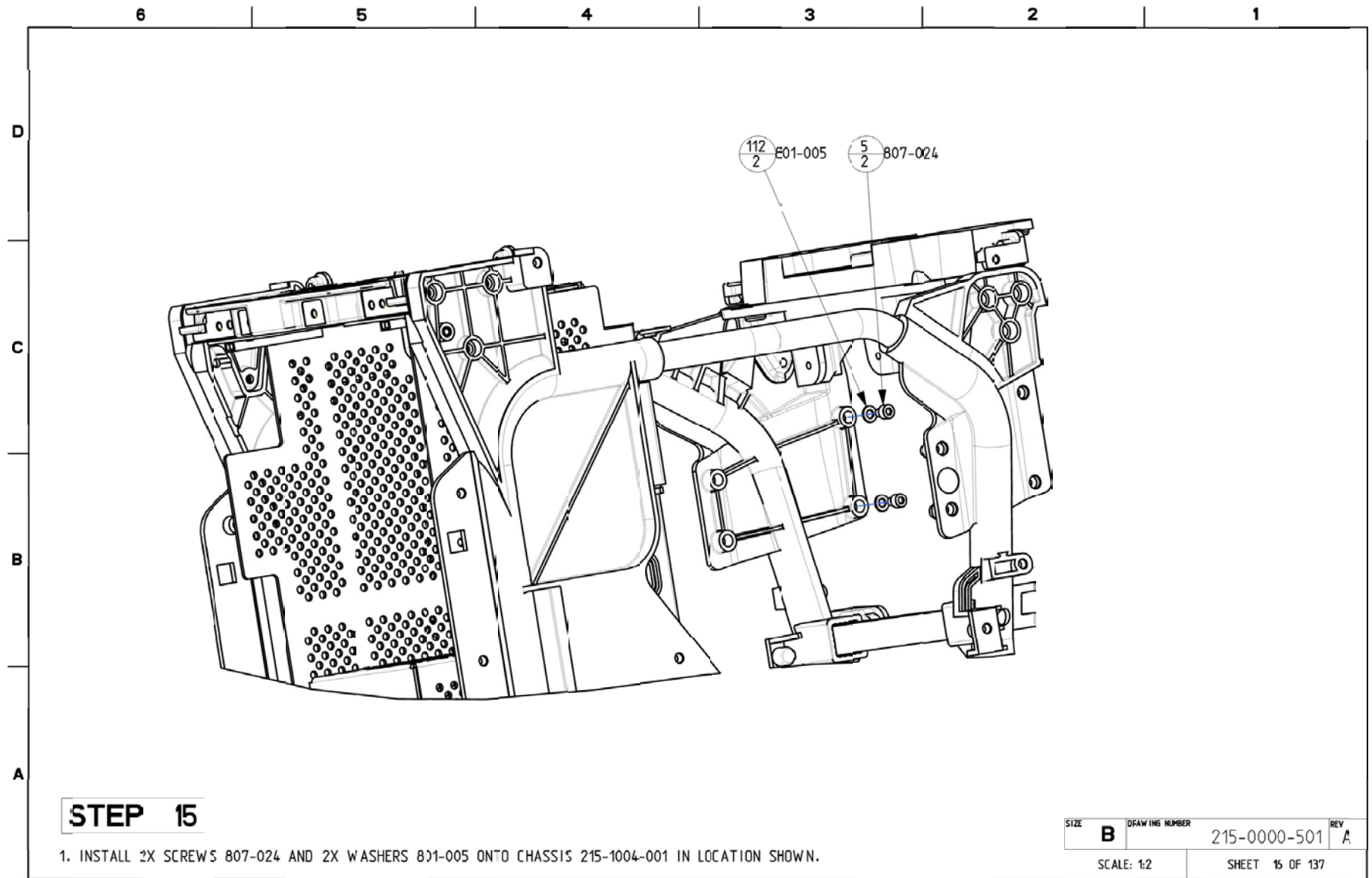


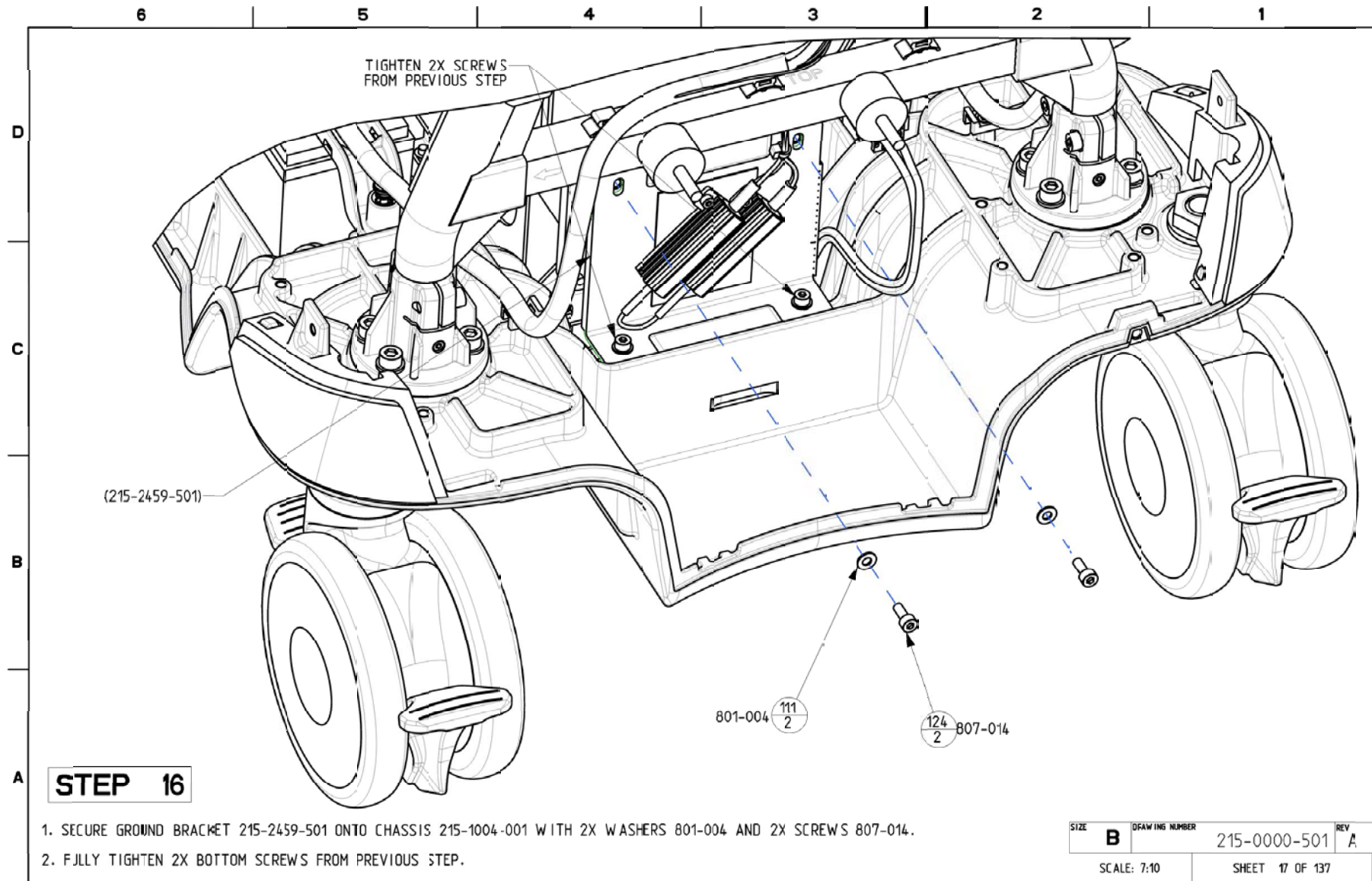


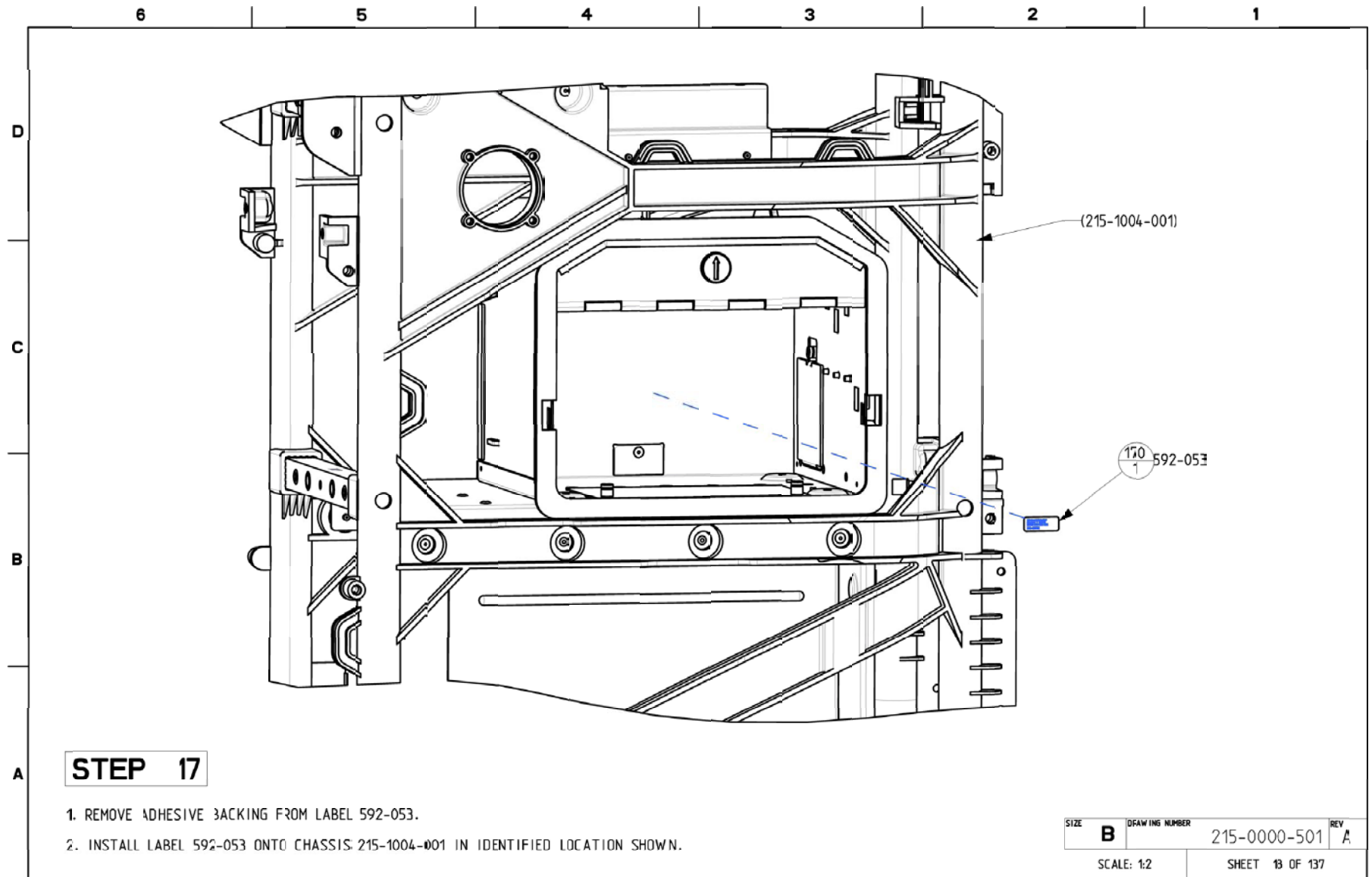


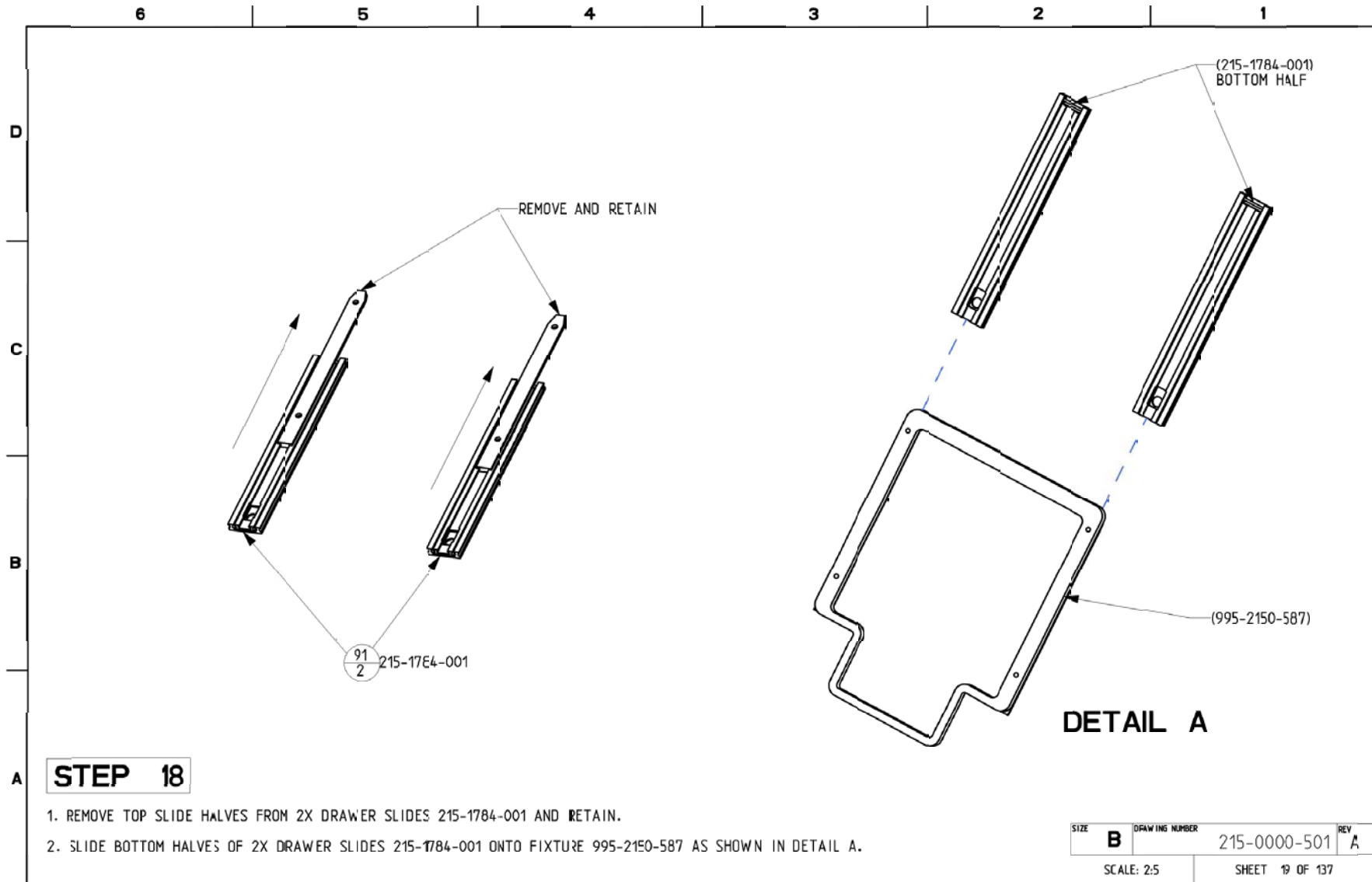


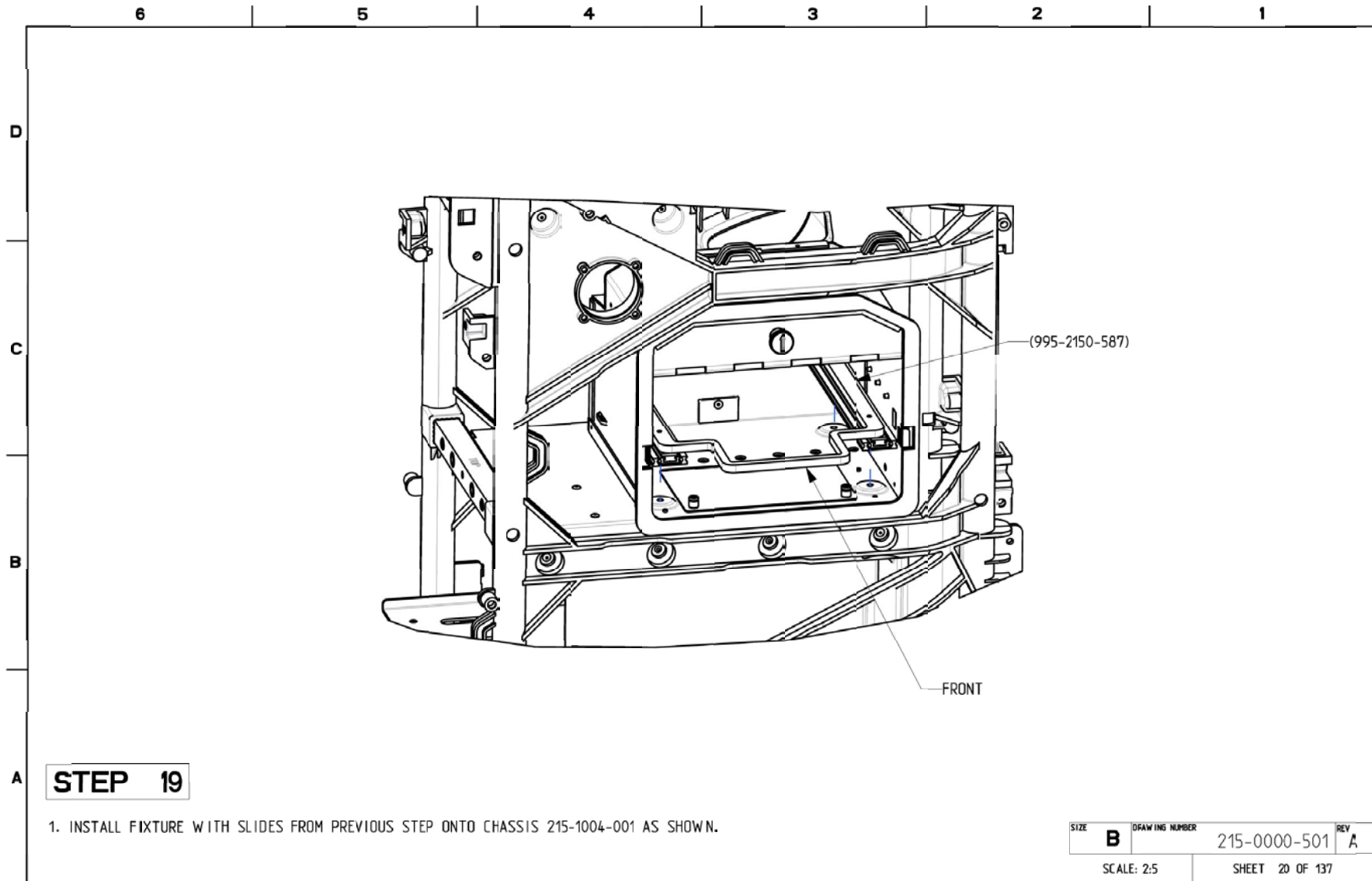


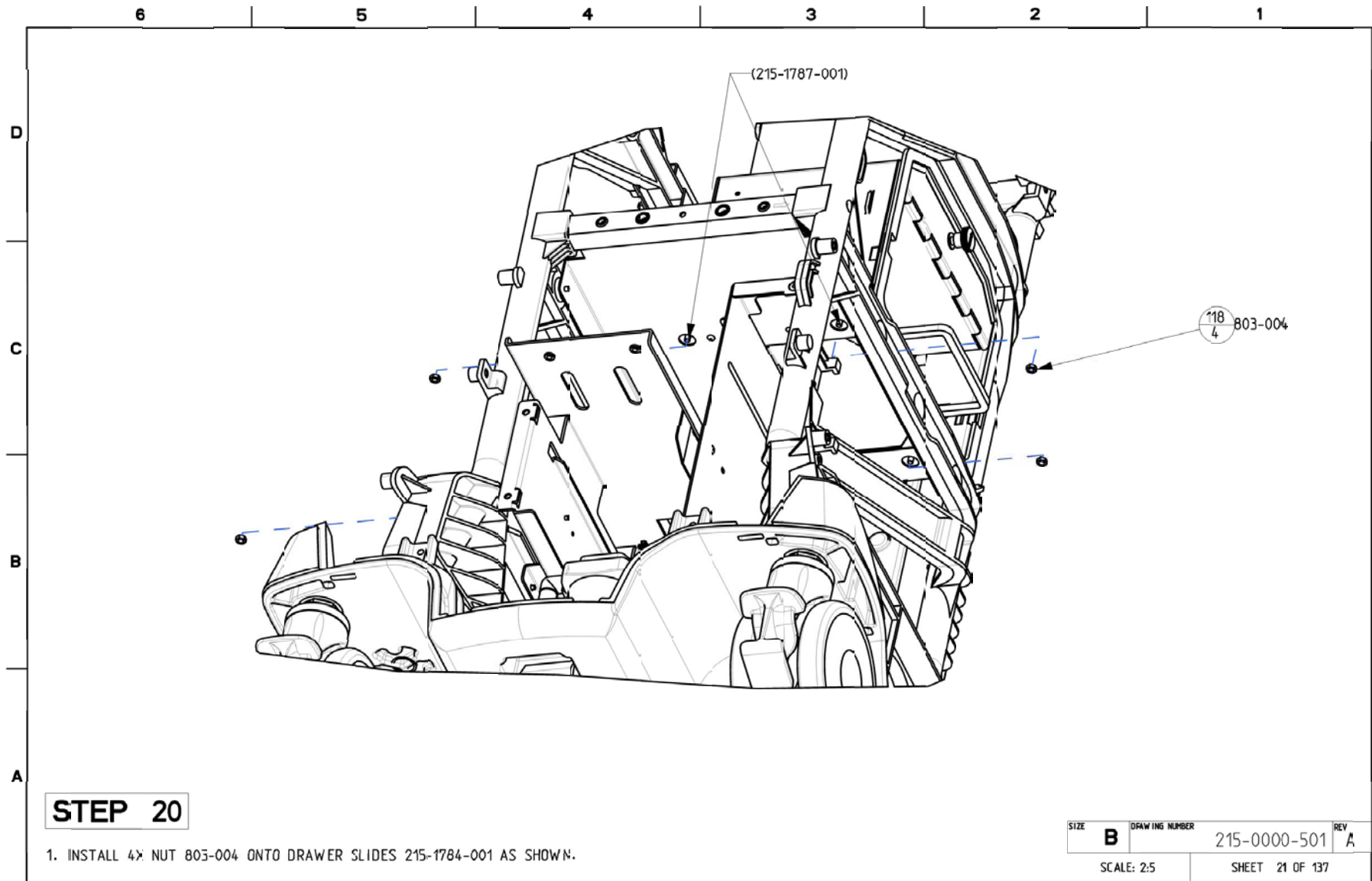


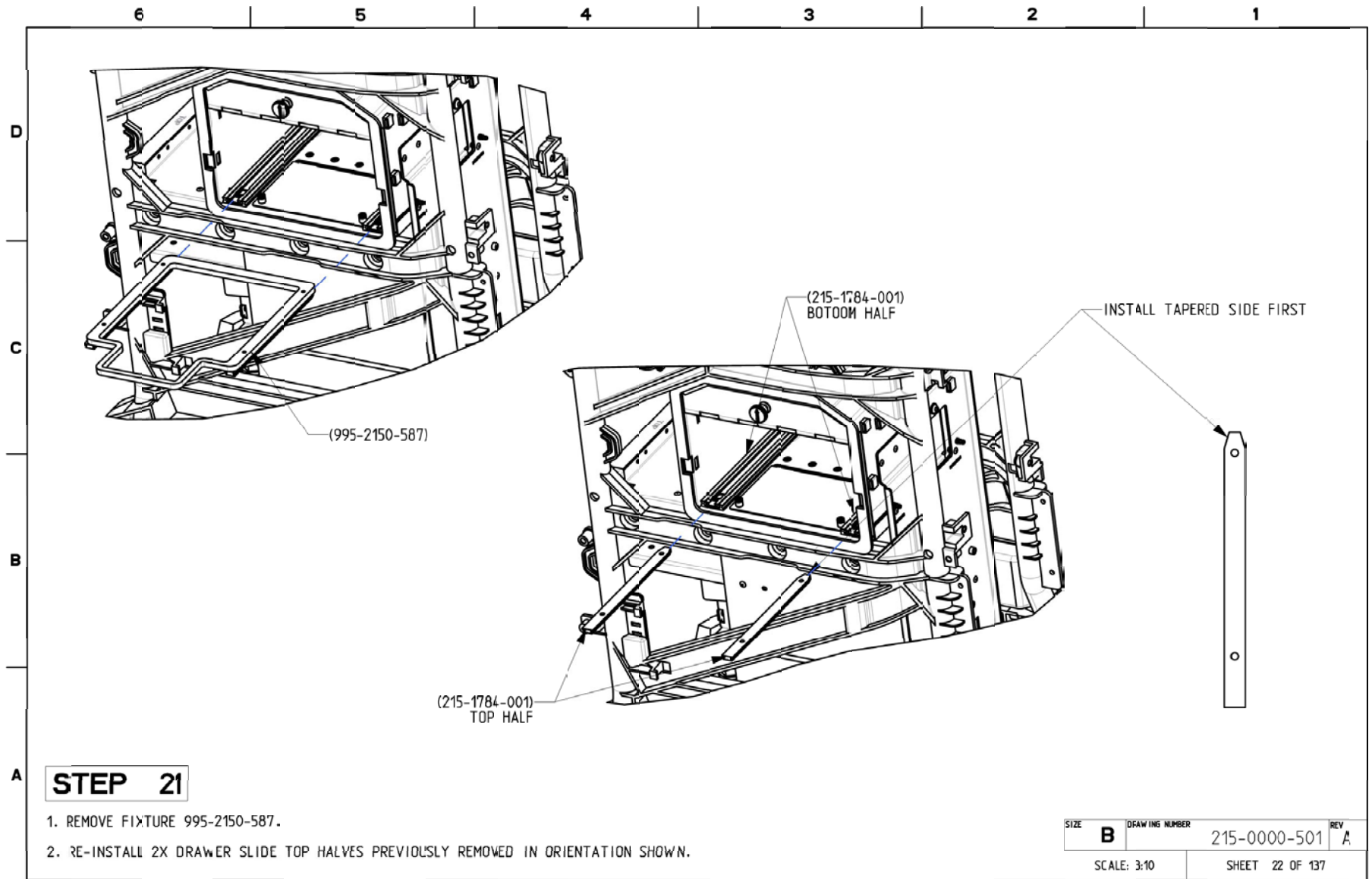


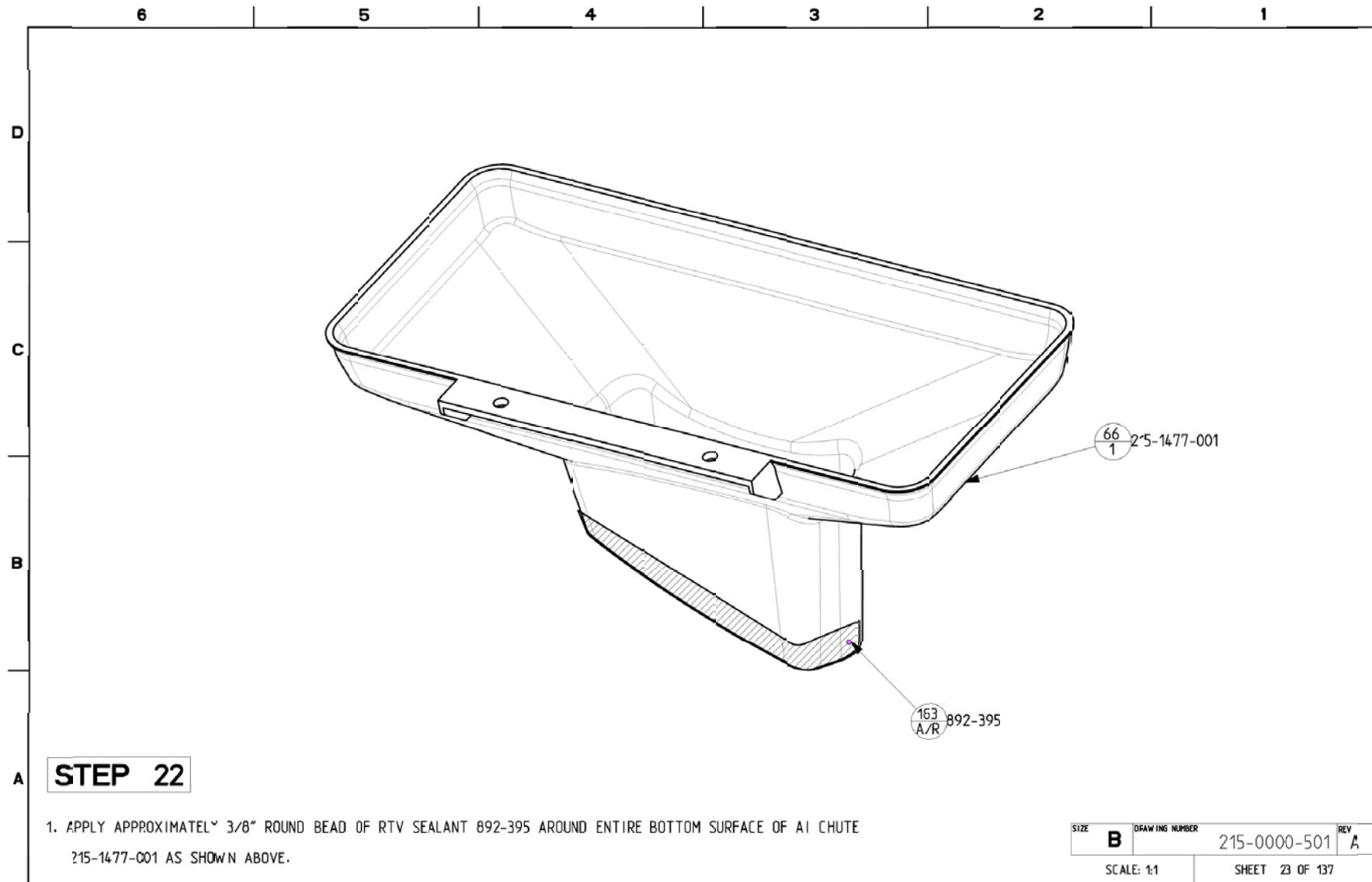


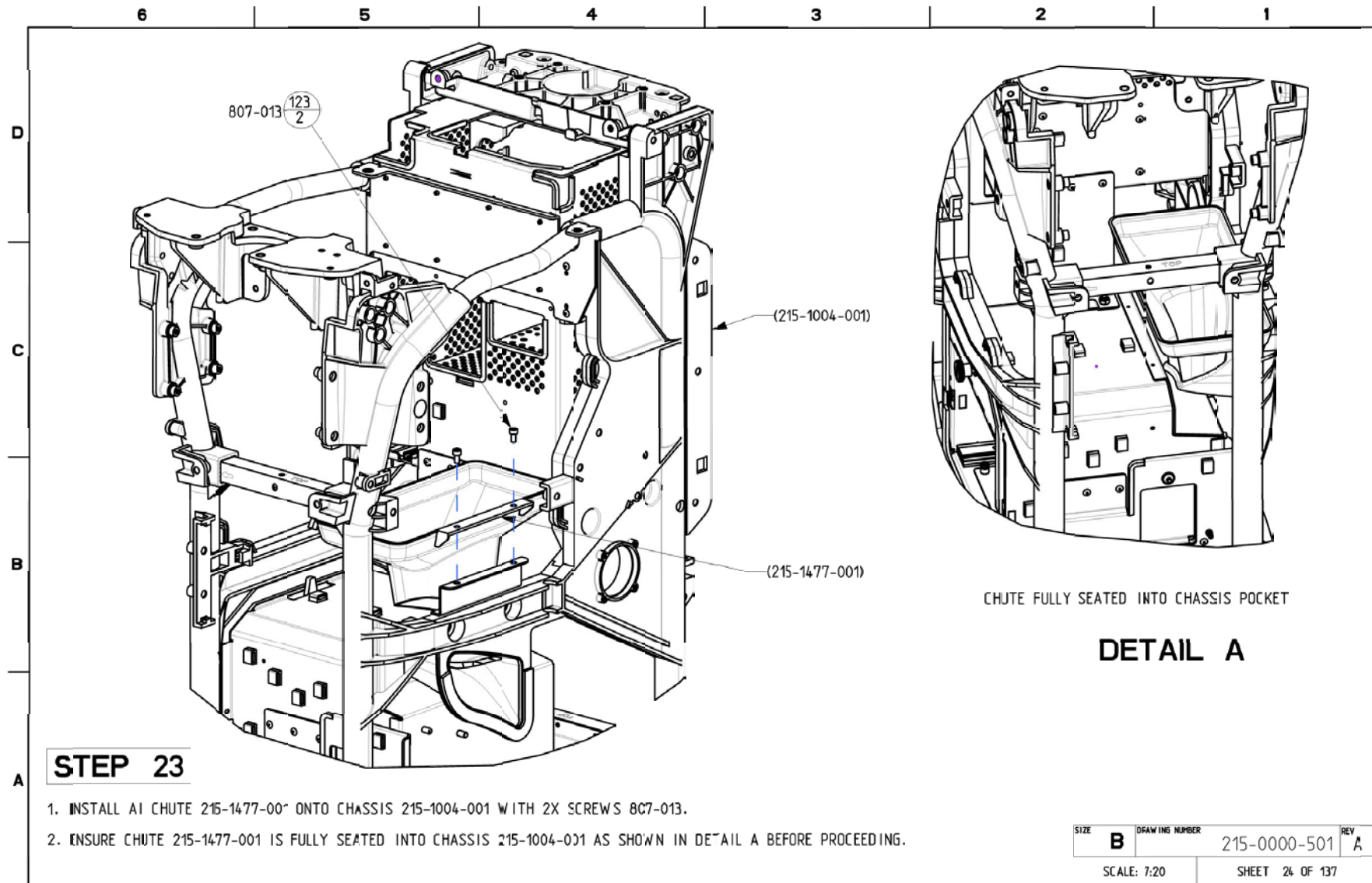


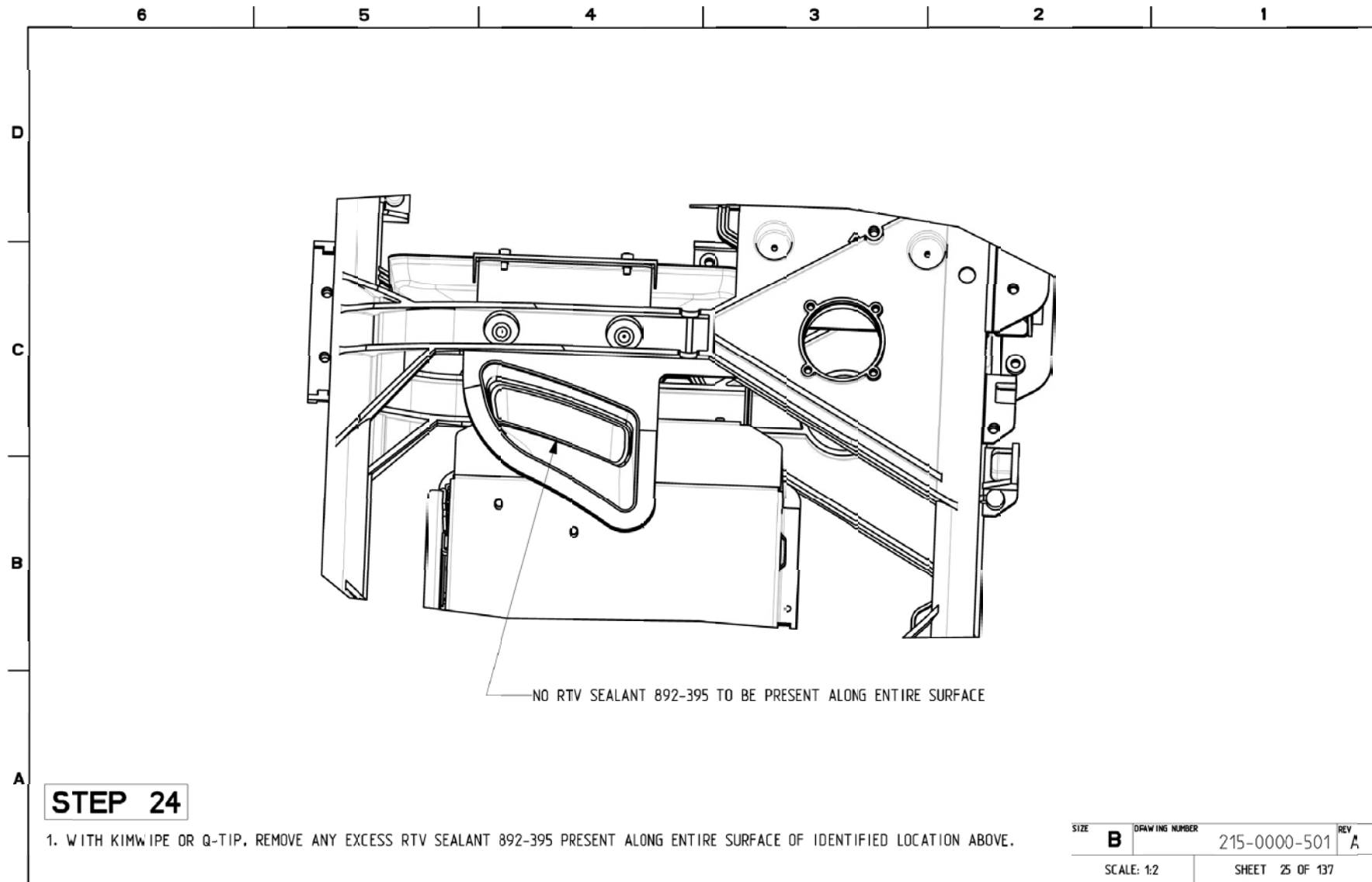


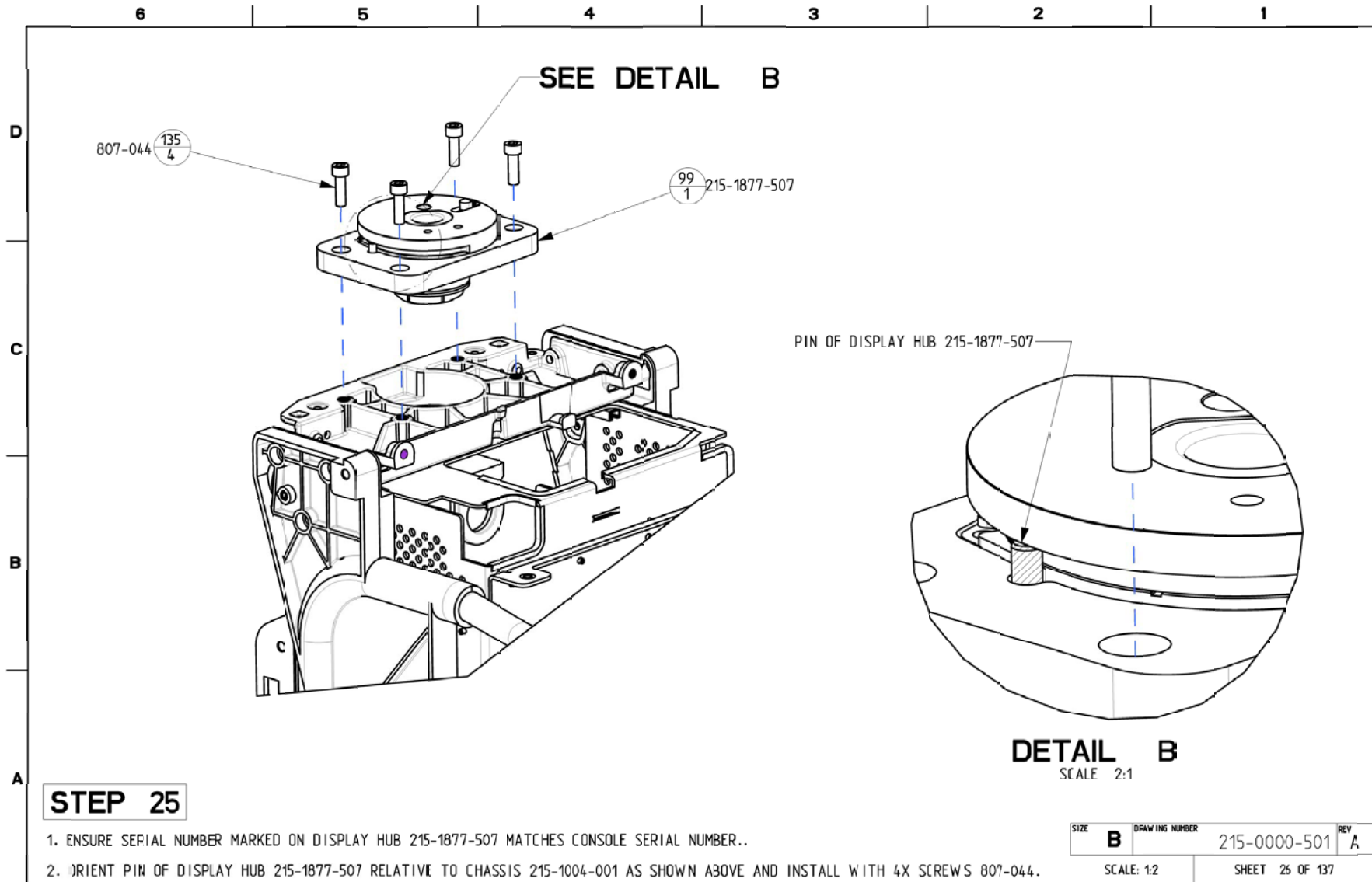


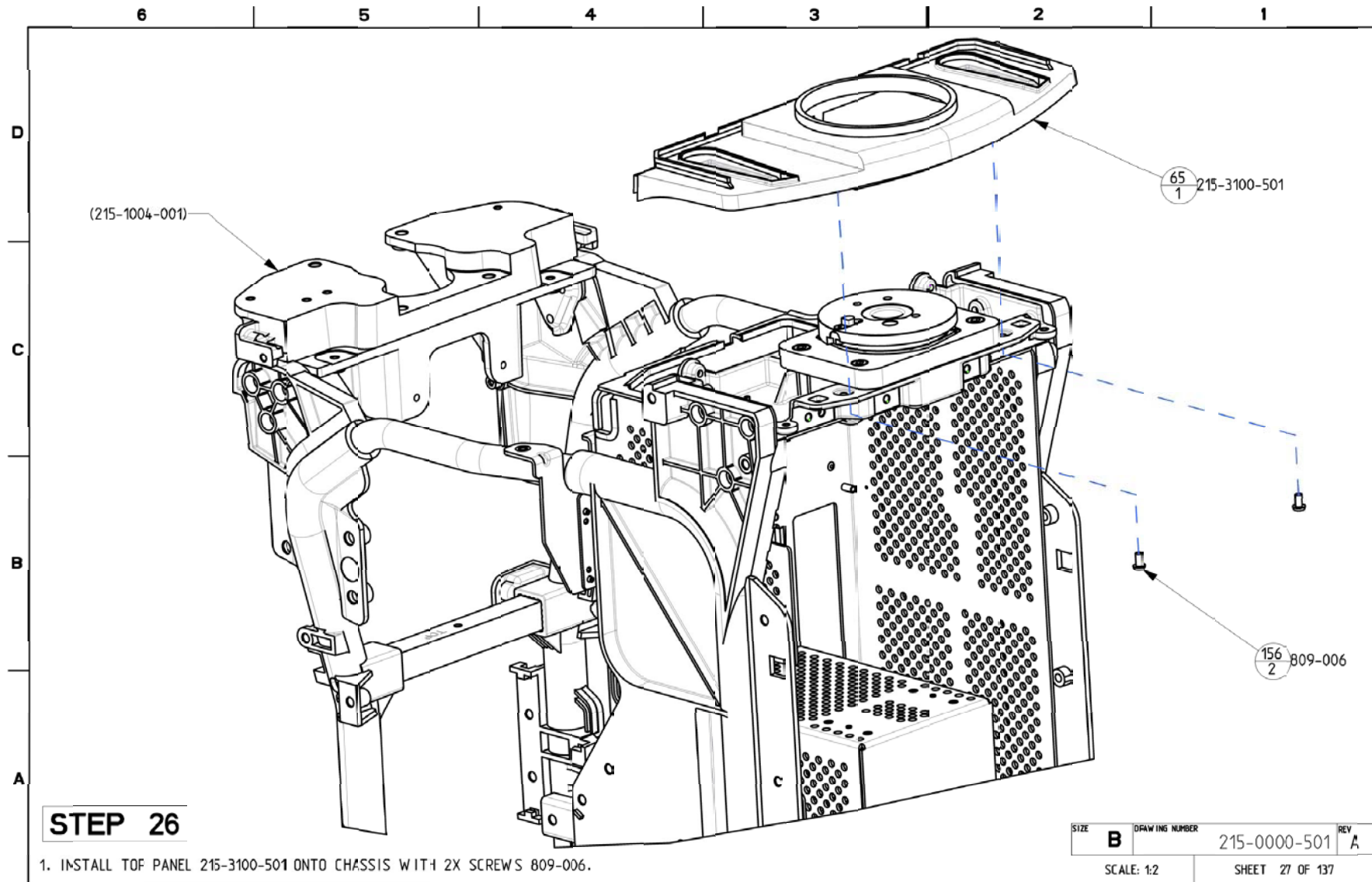


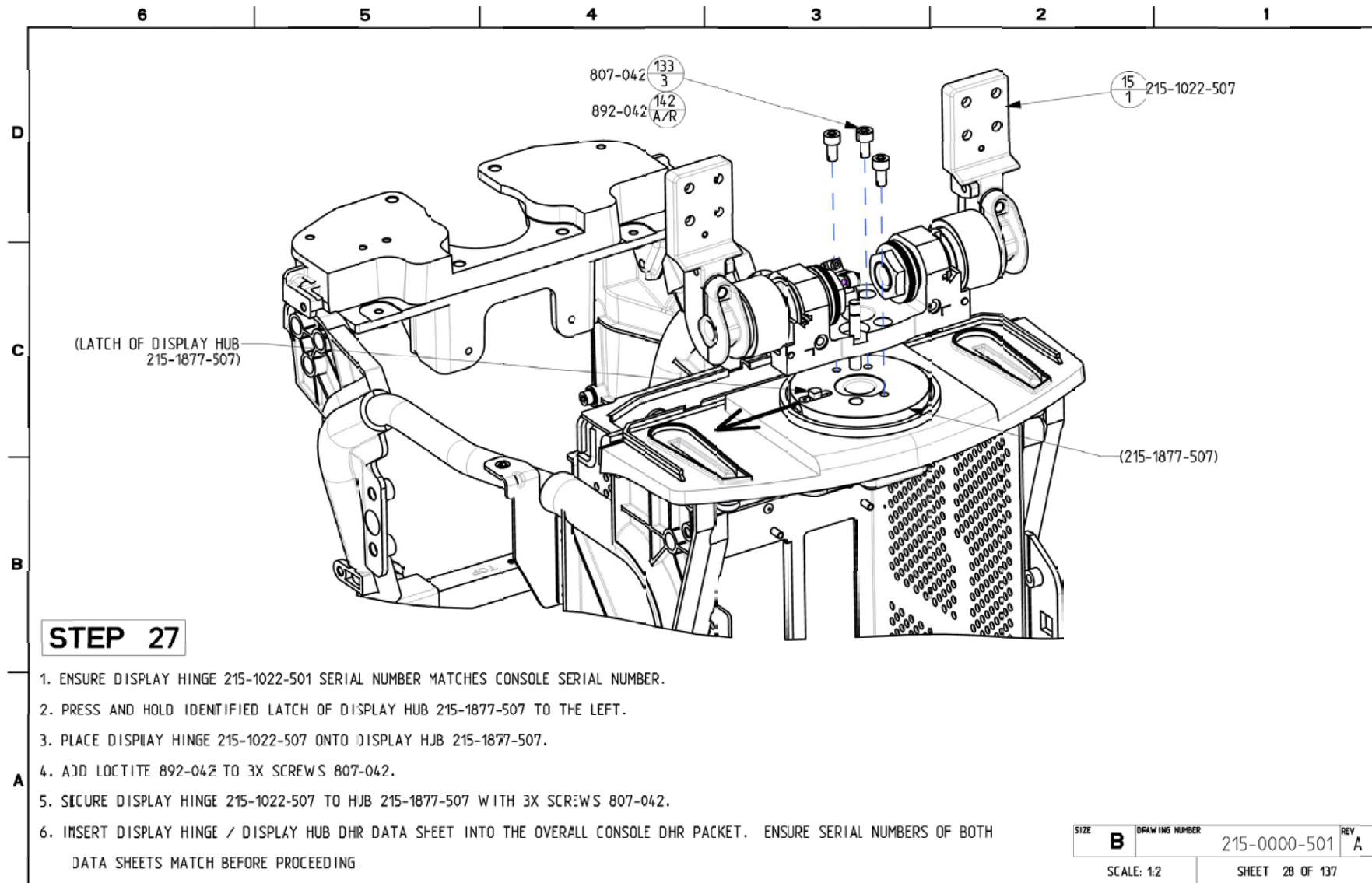


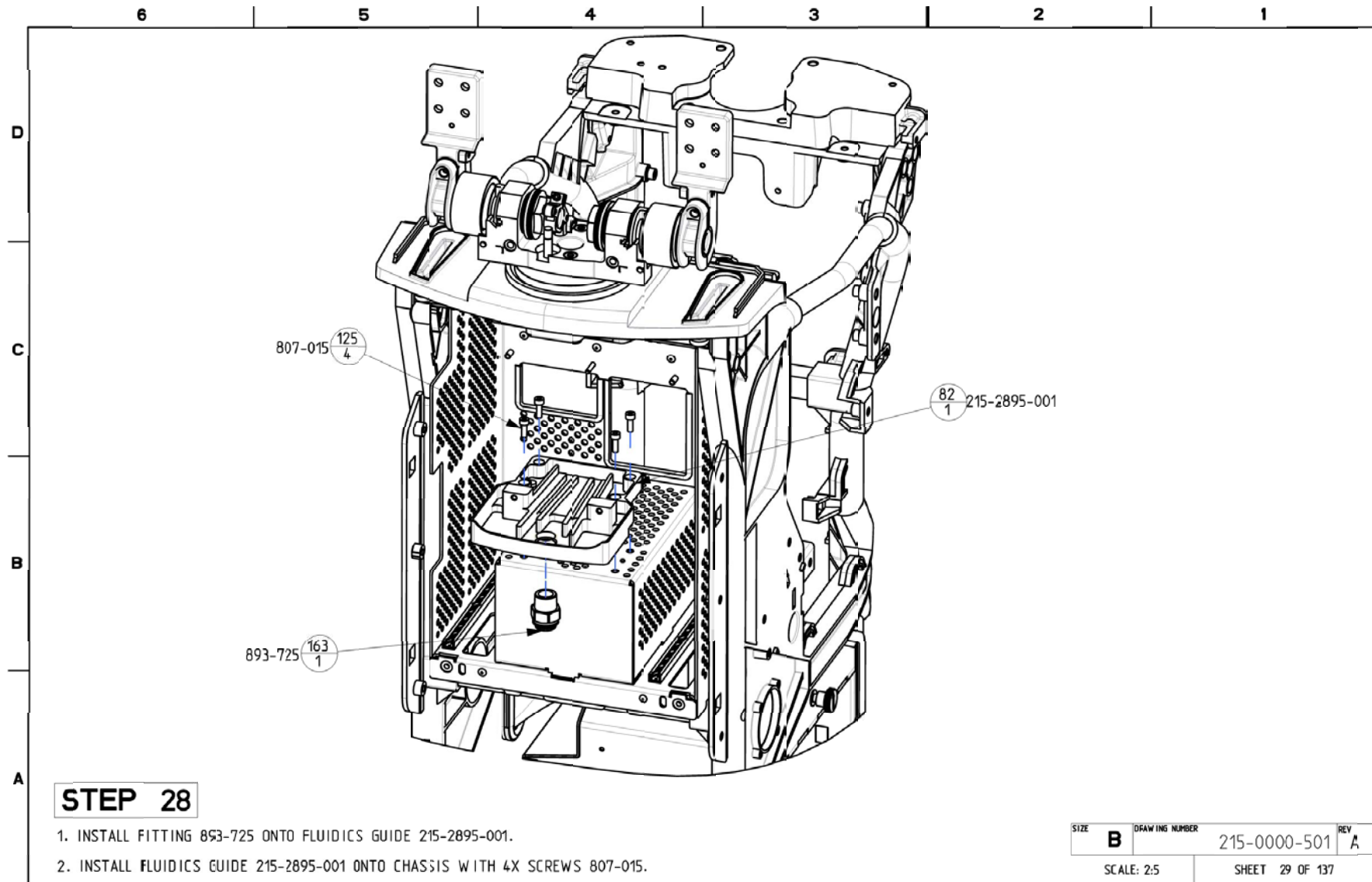


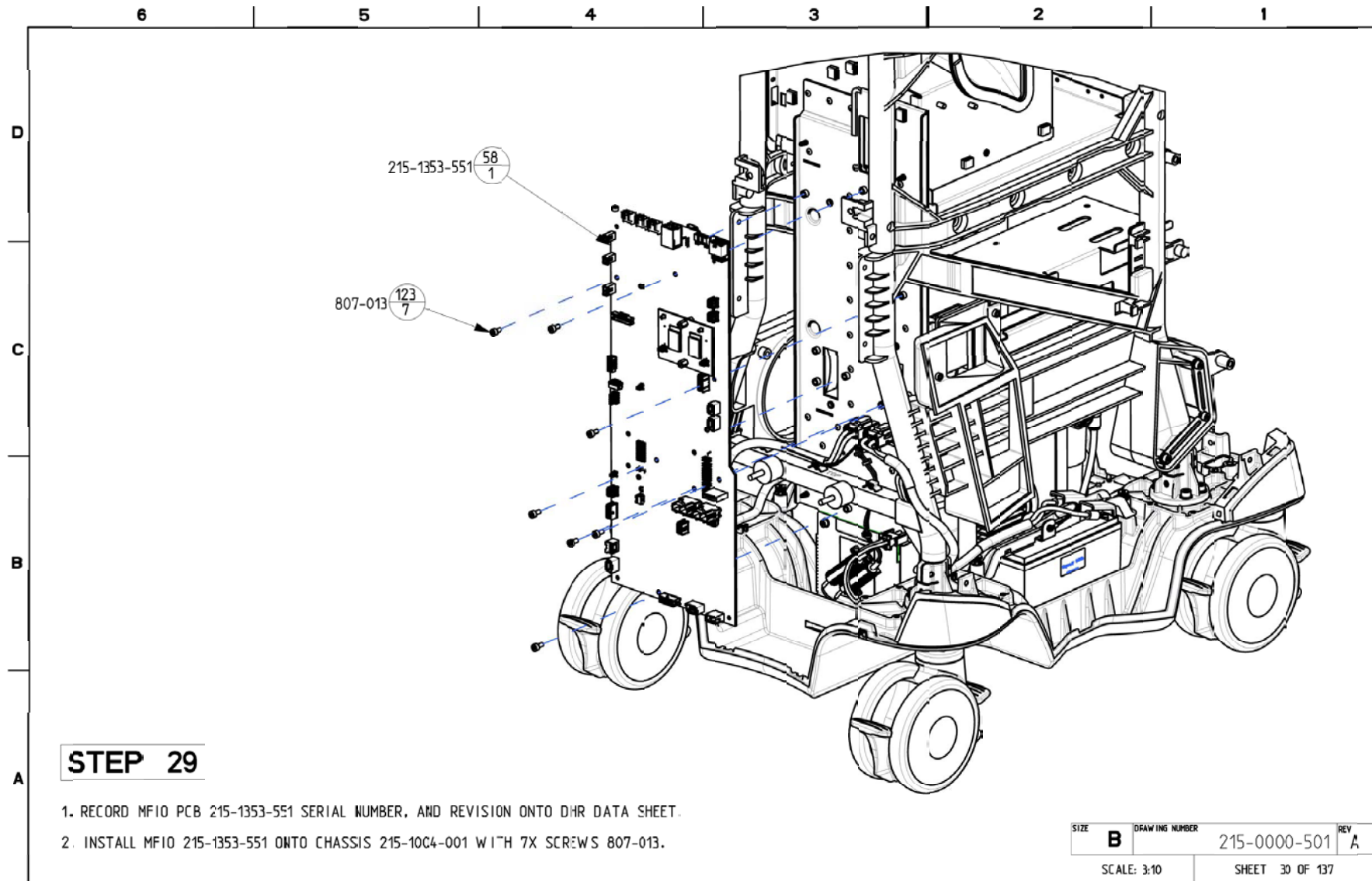


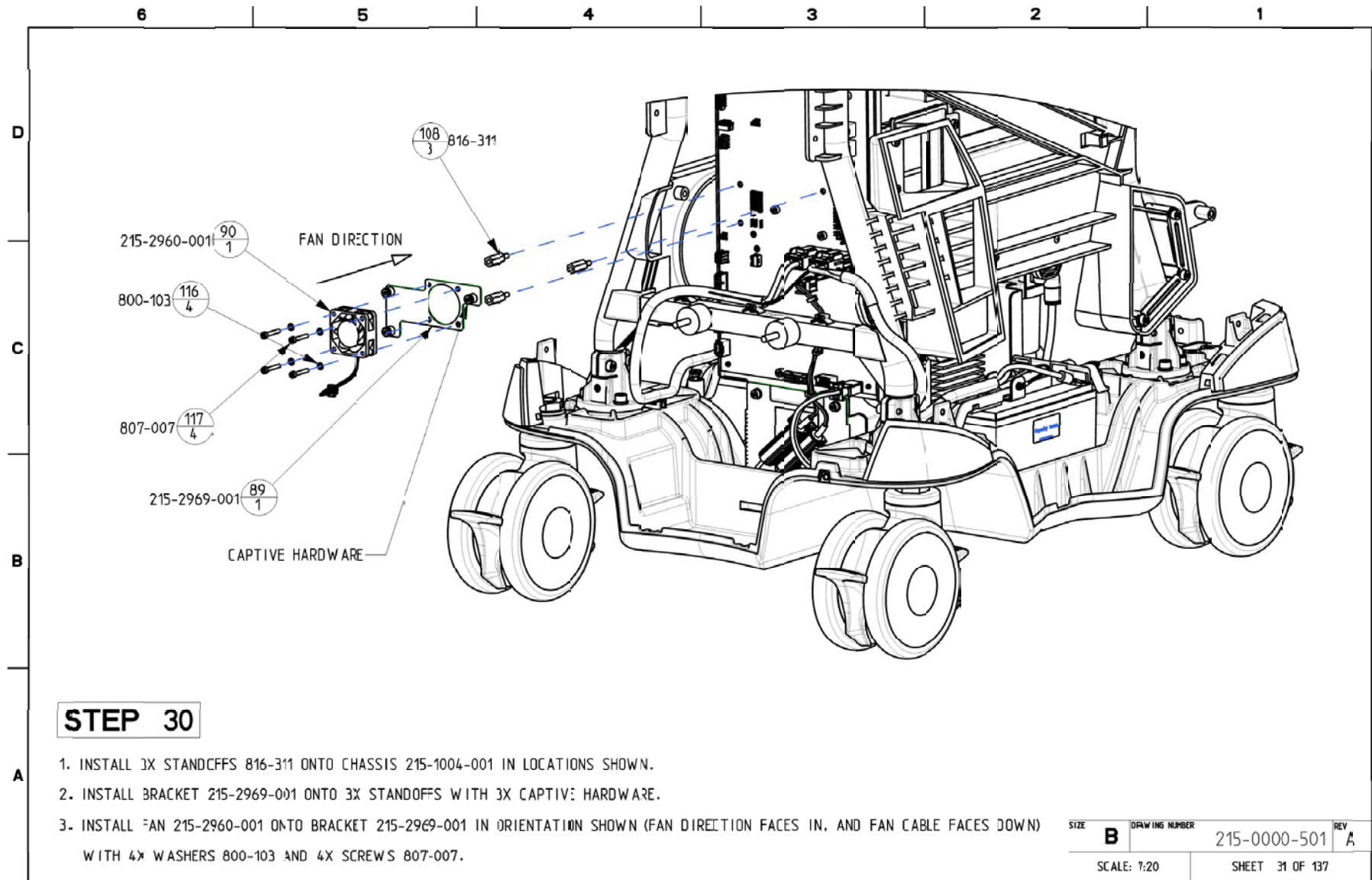


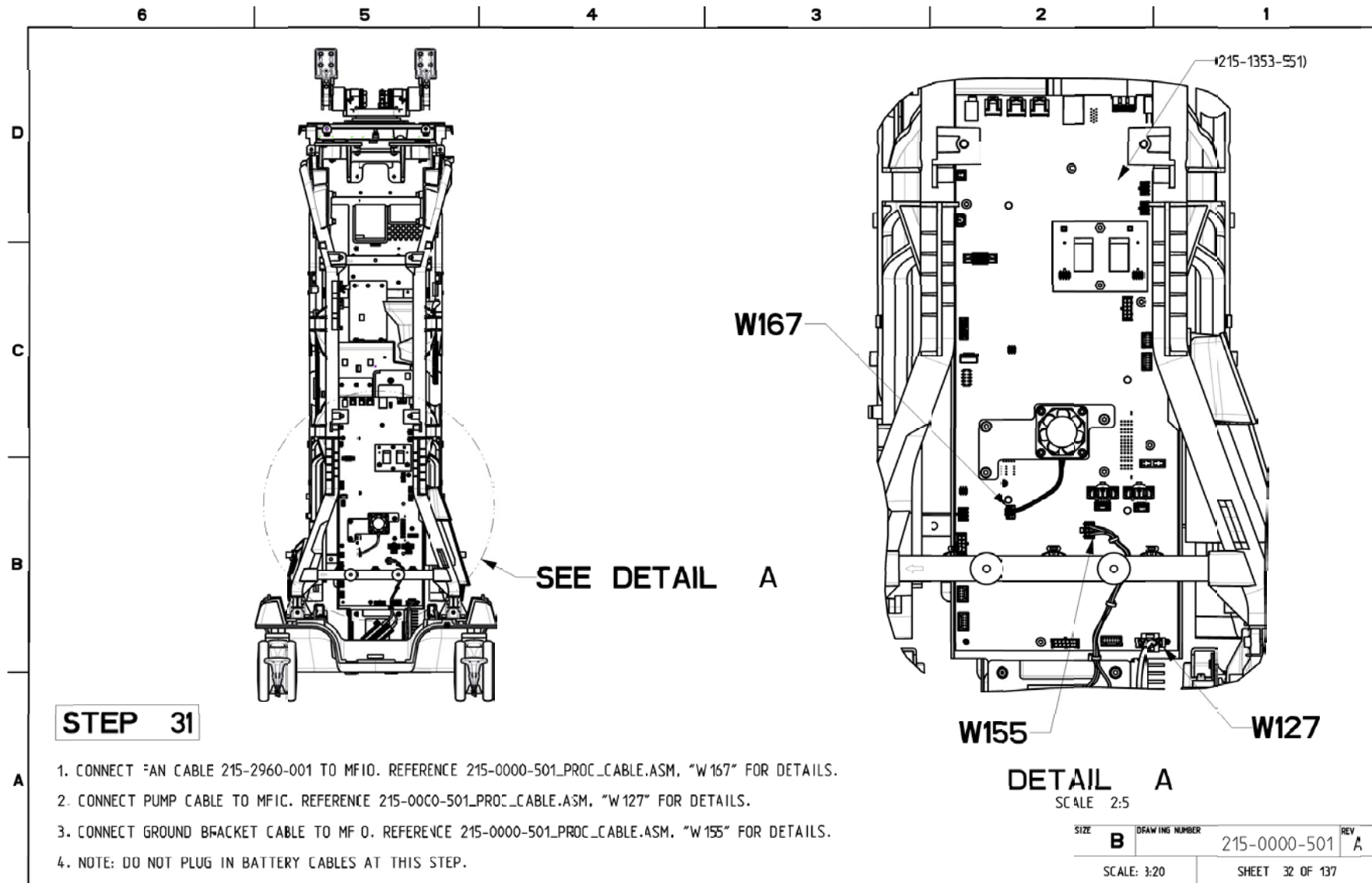


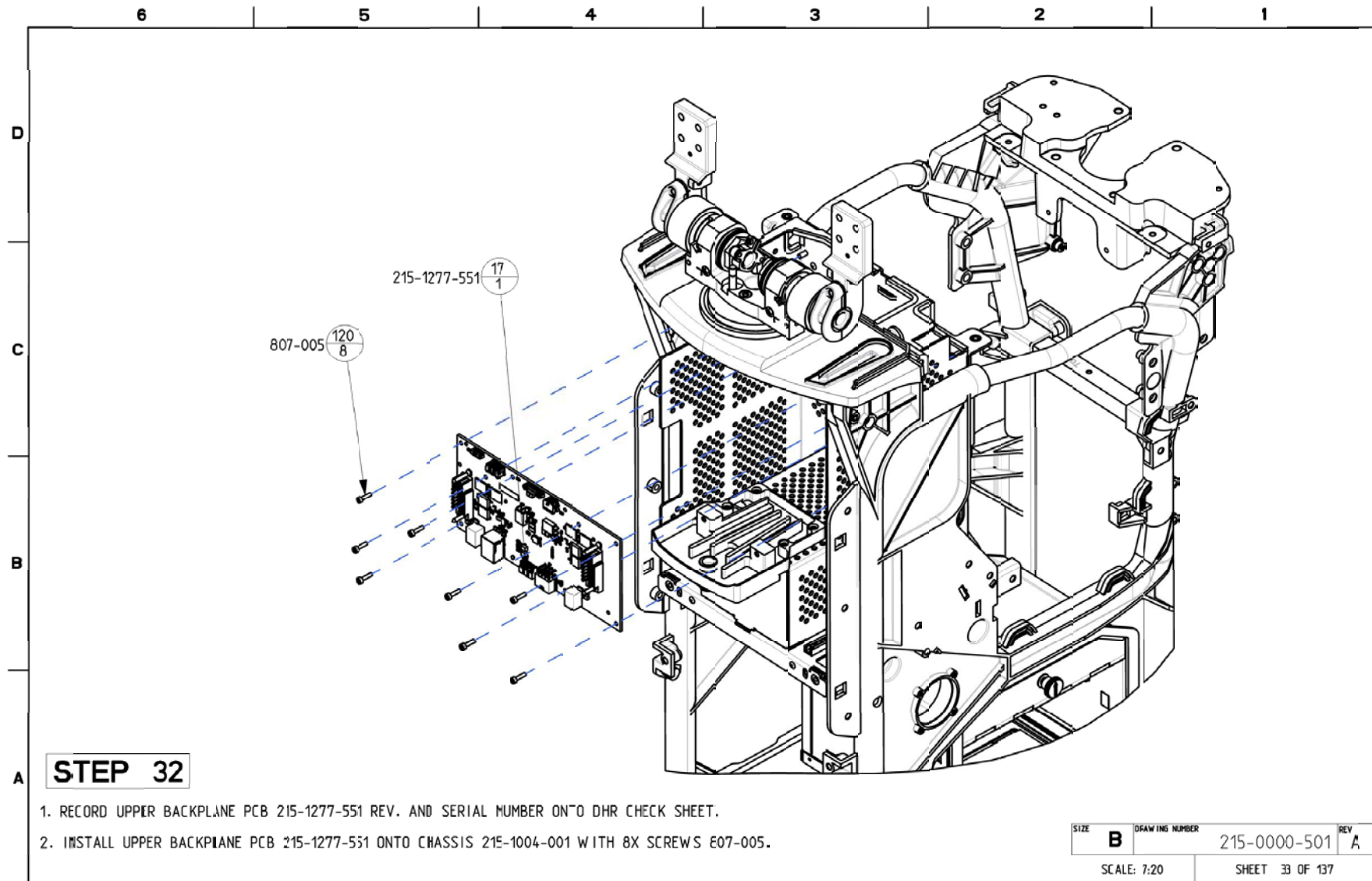


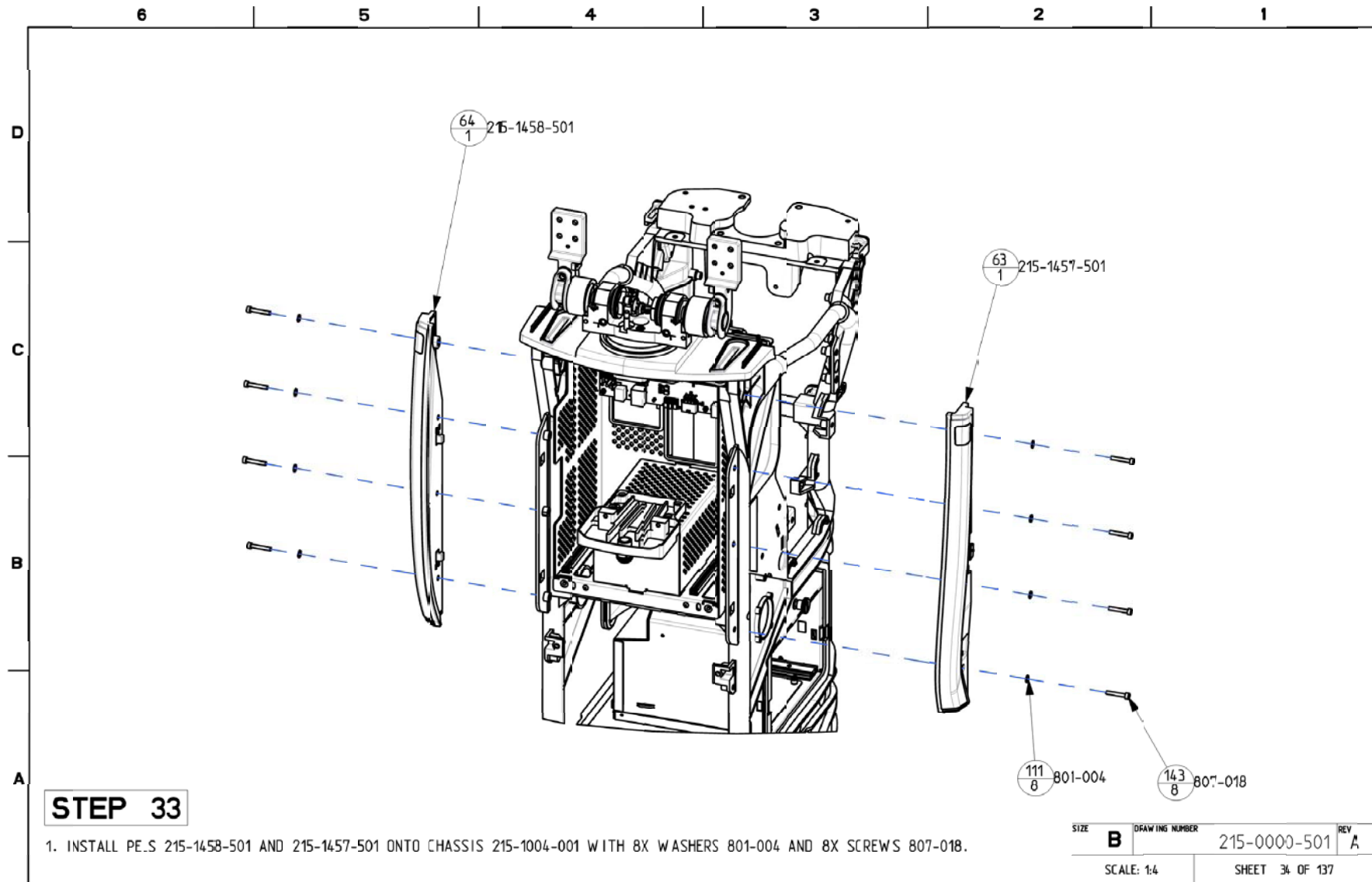


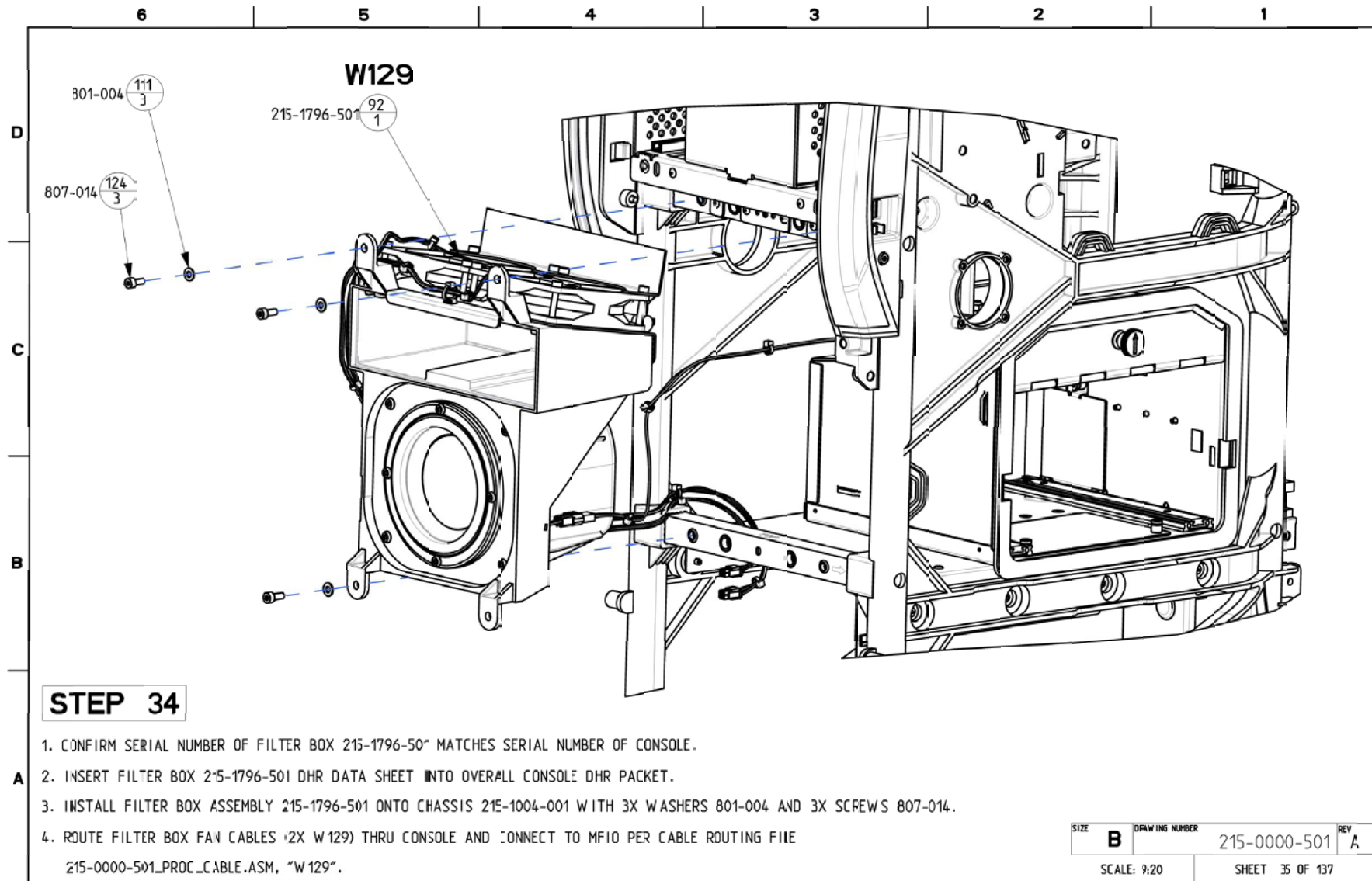


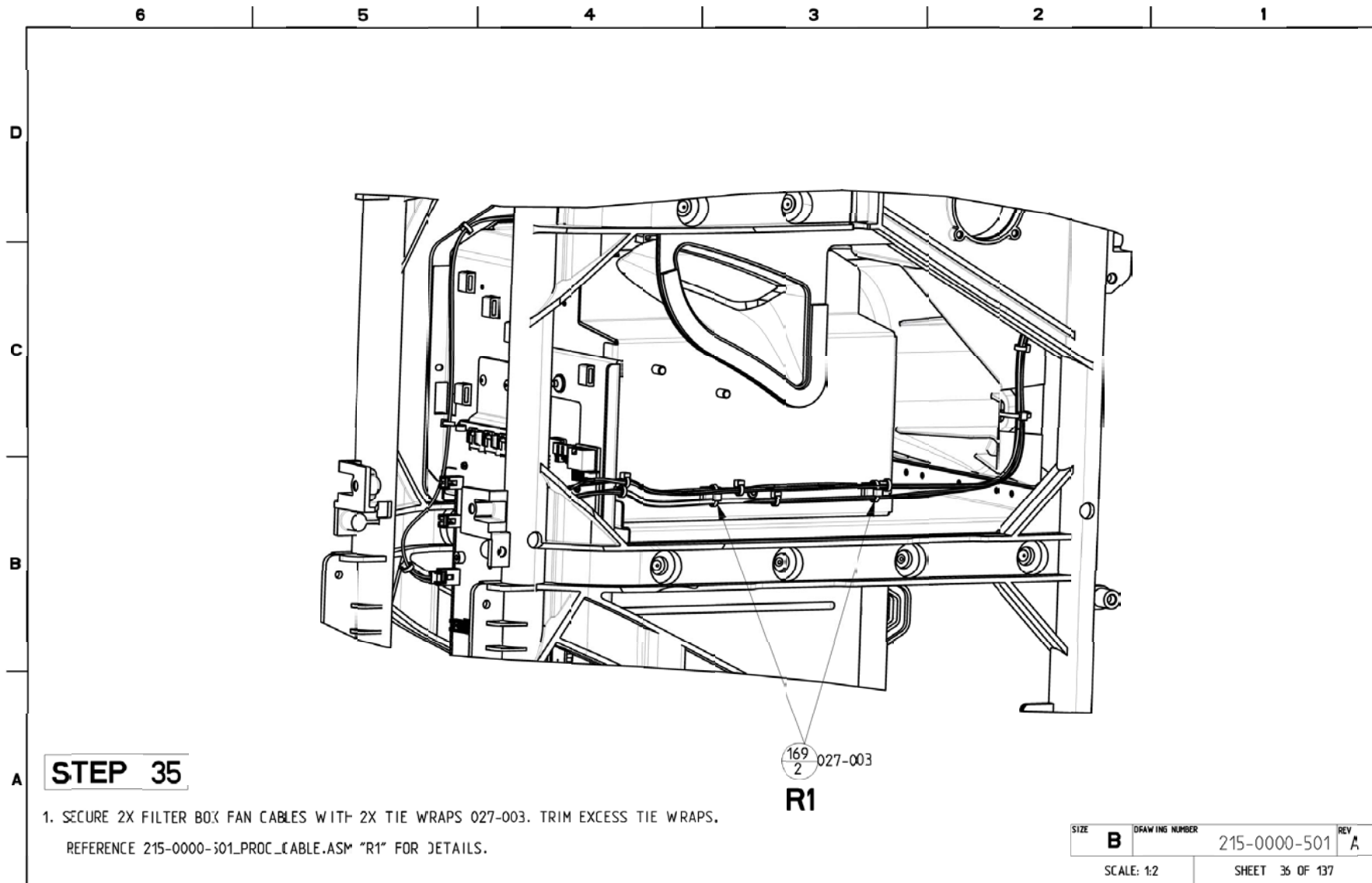


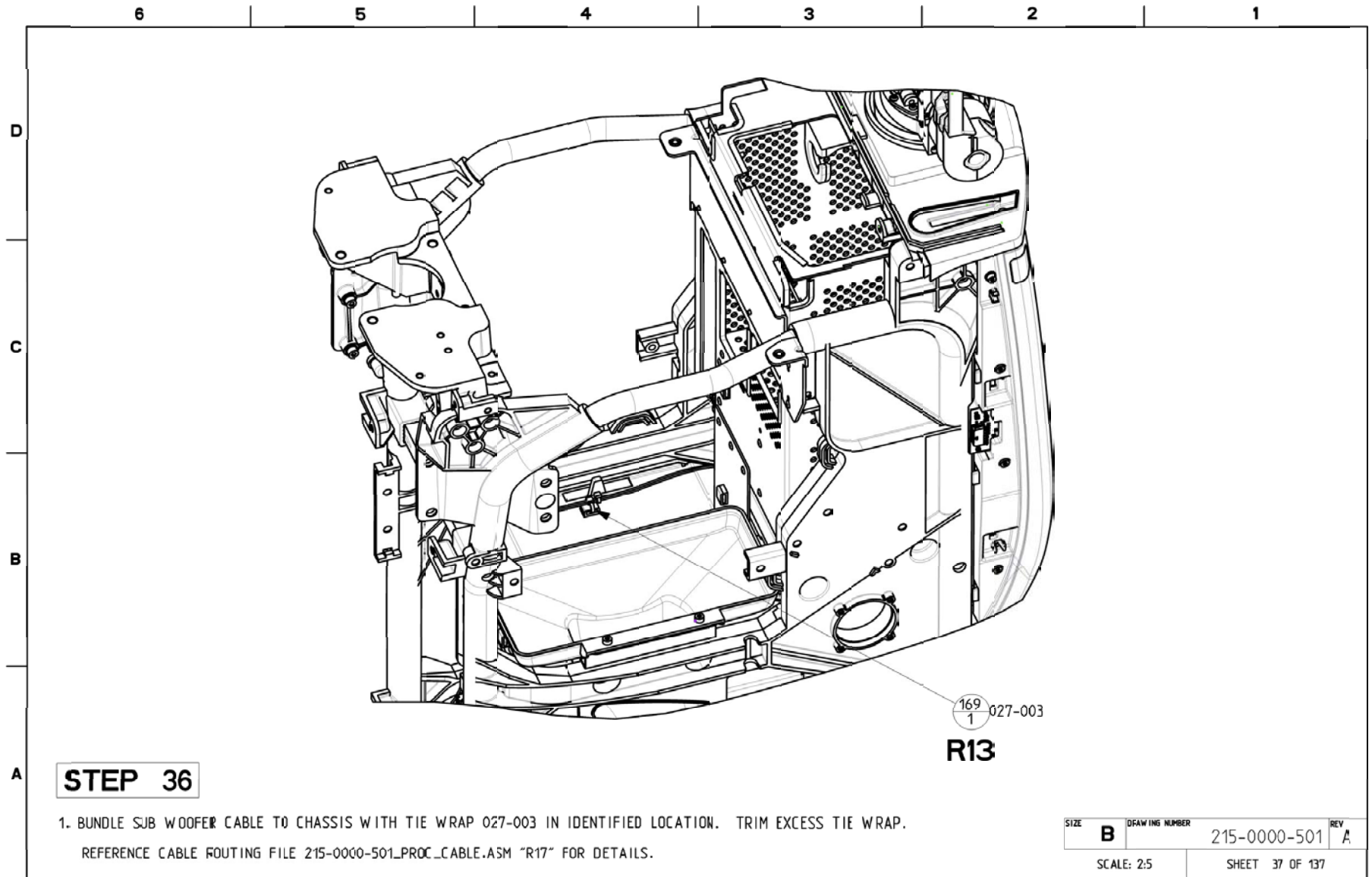








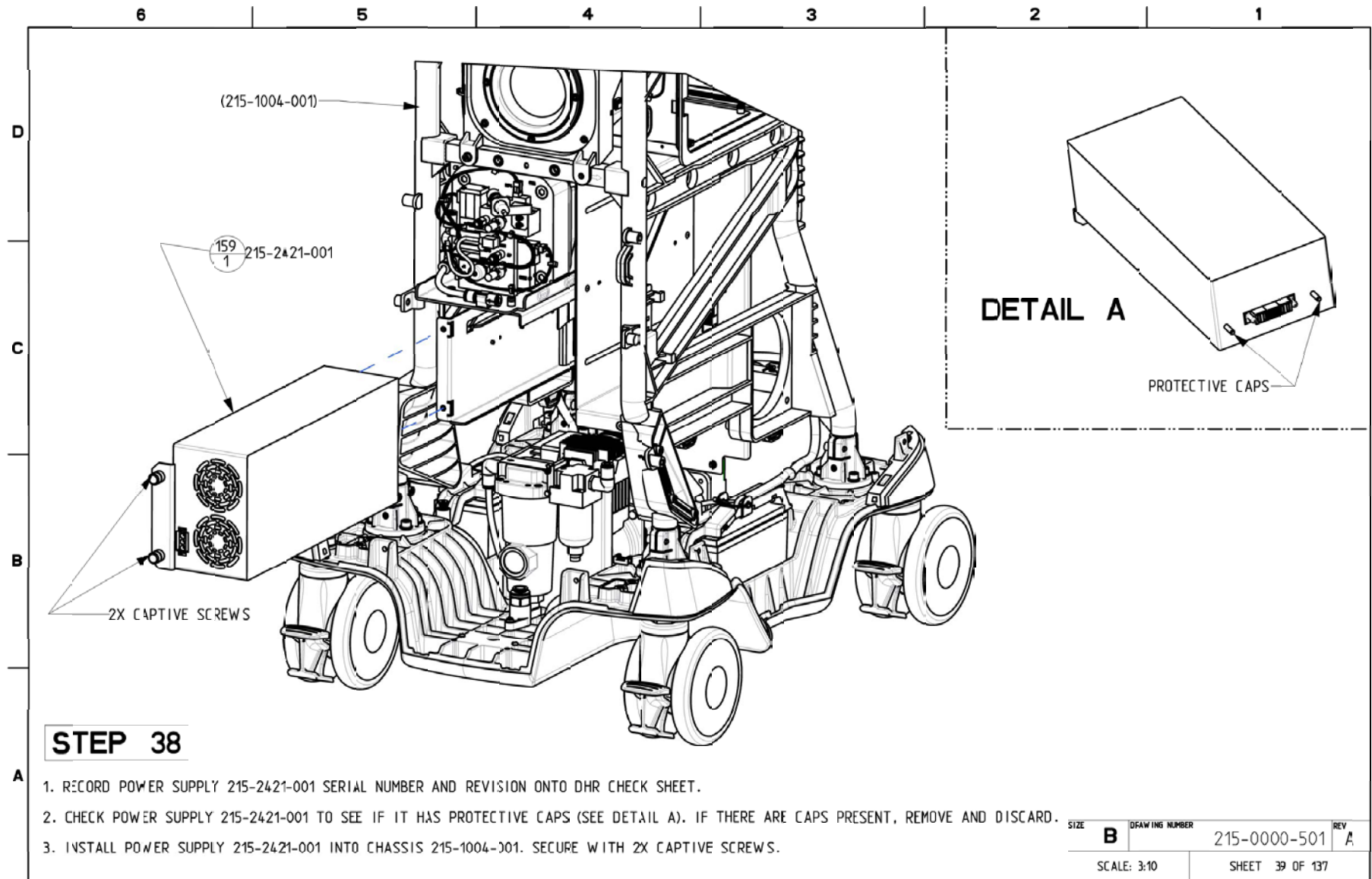


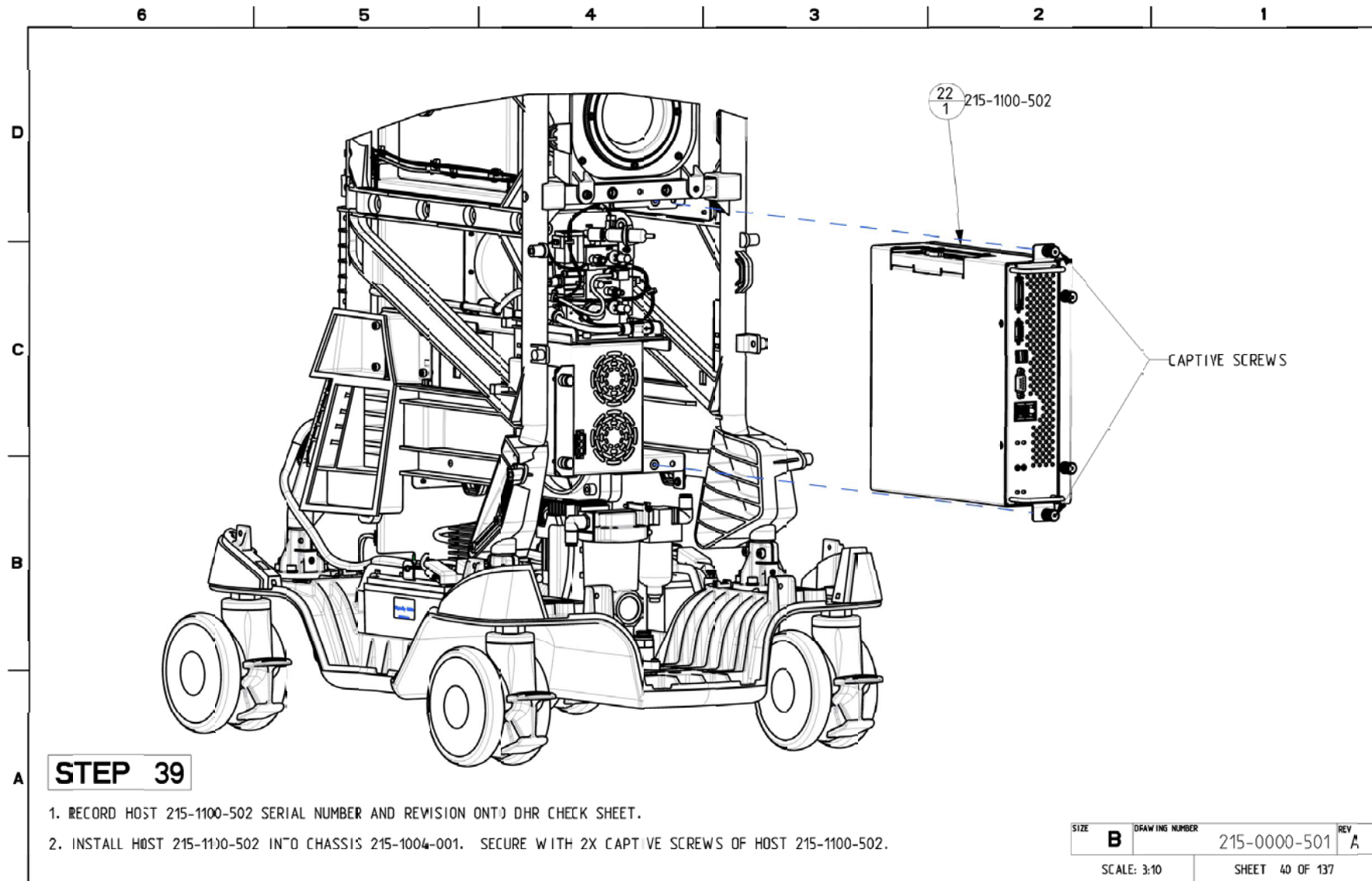


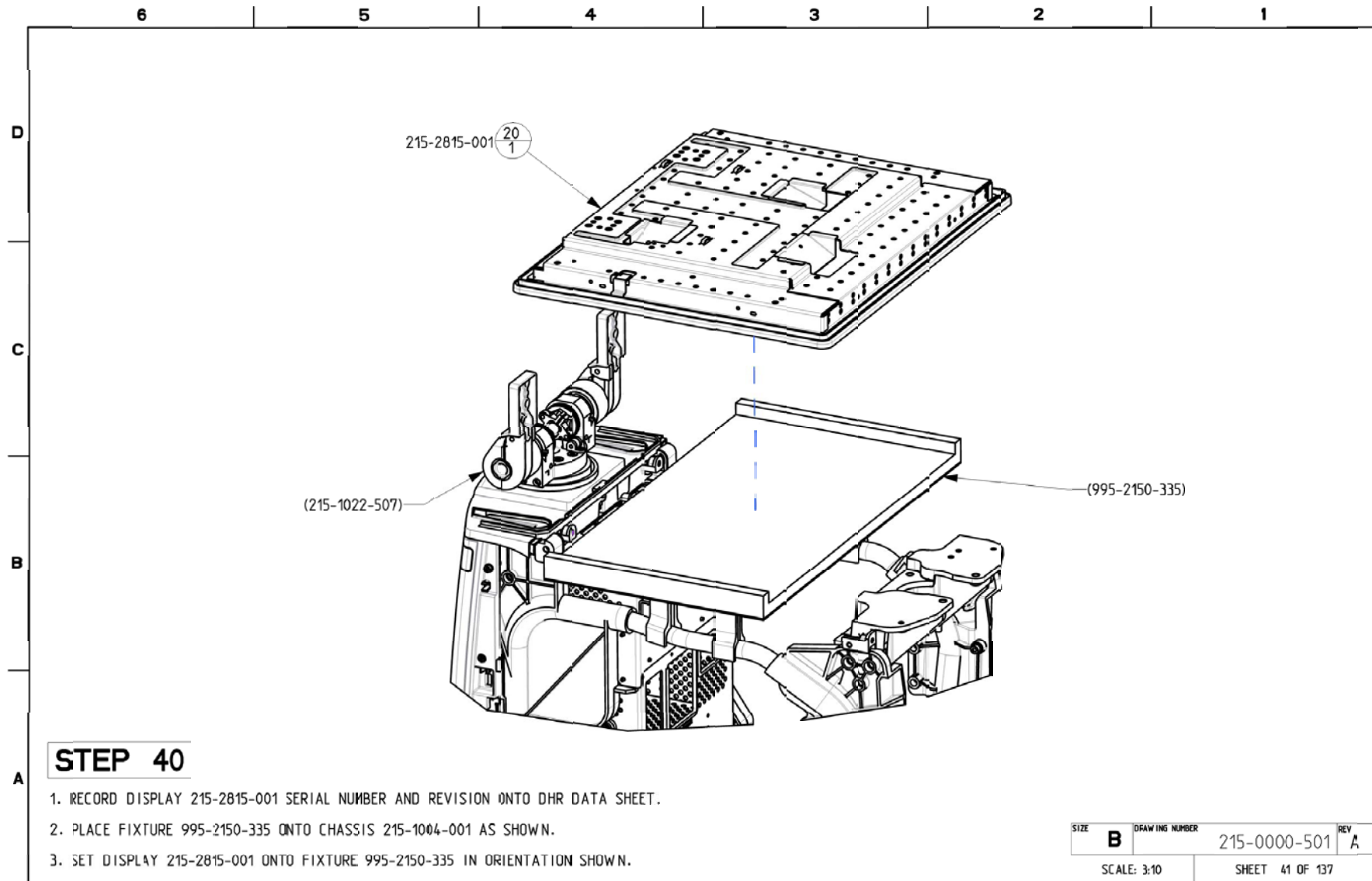


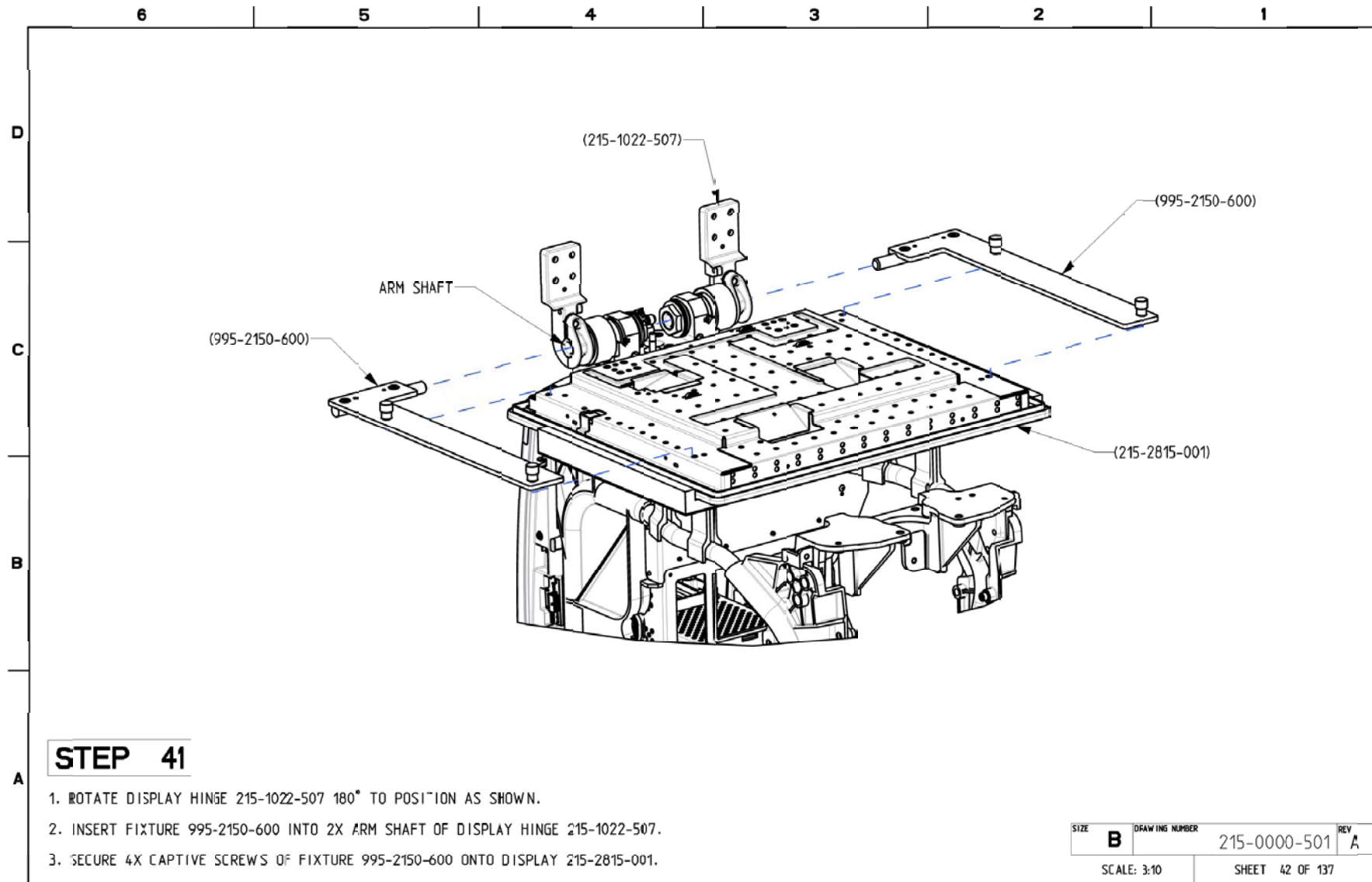
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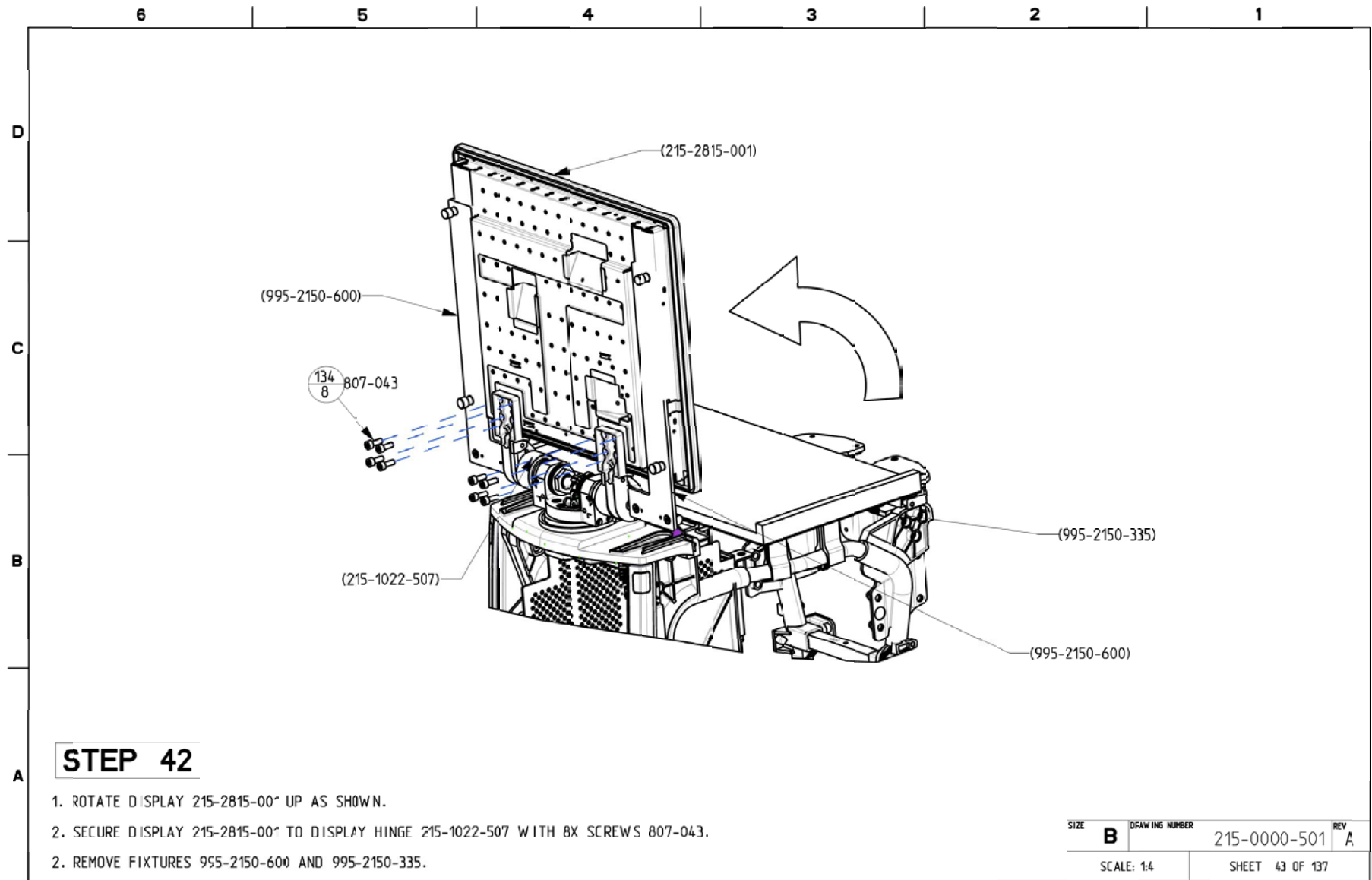
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| SCALE: 2:5 | | SHEET 38 OF 137 |

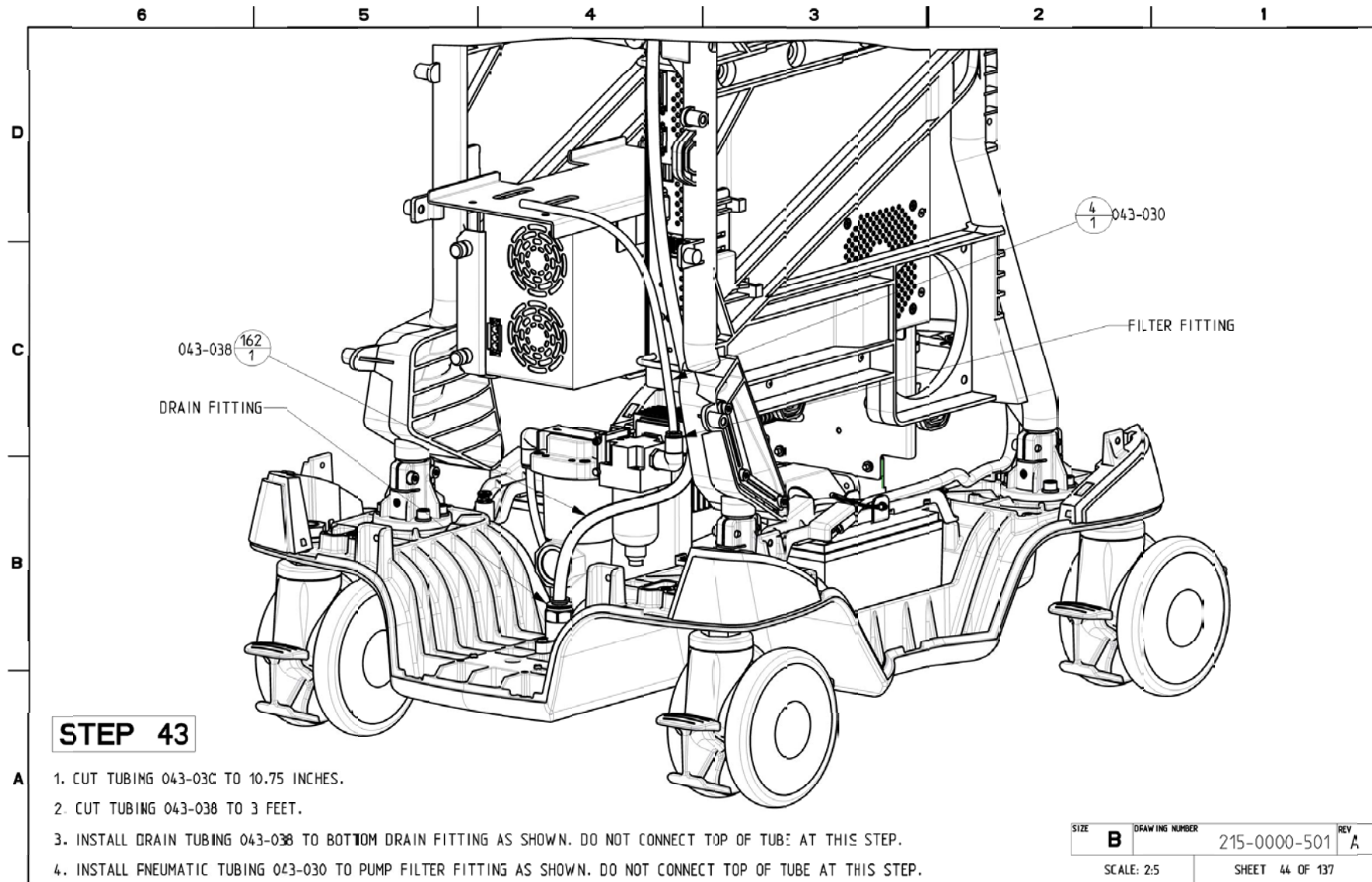


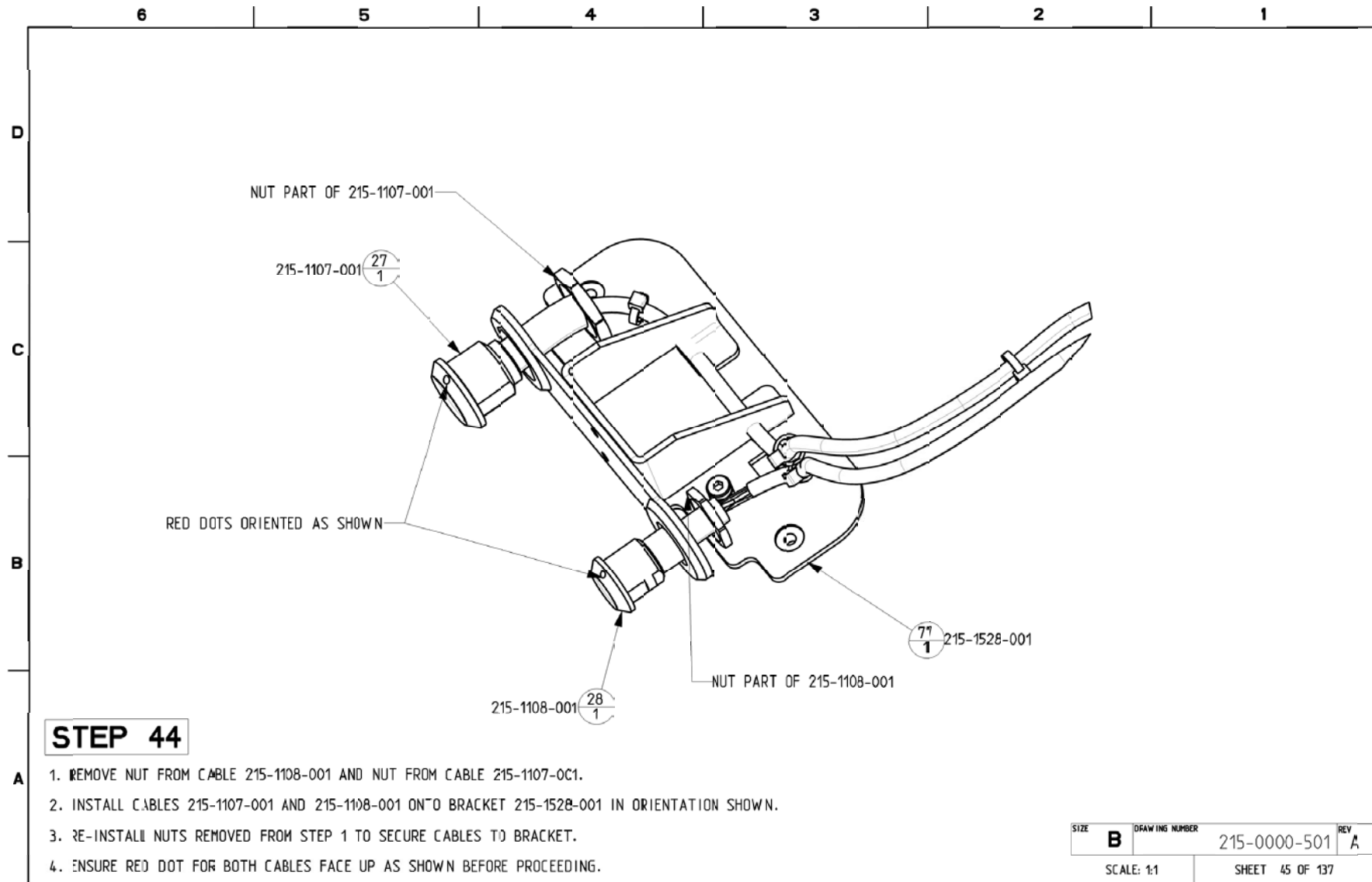


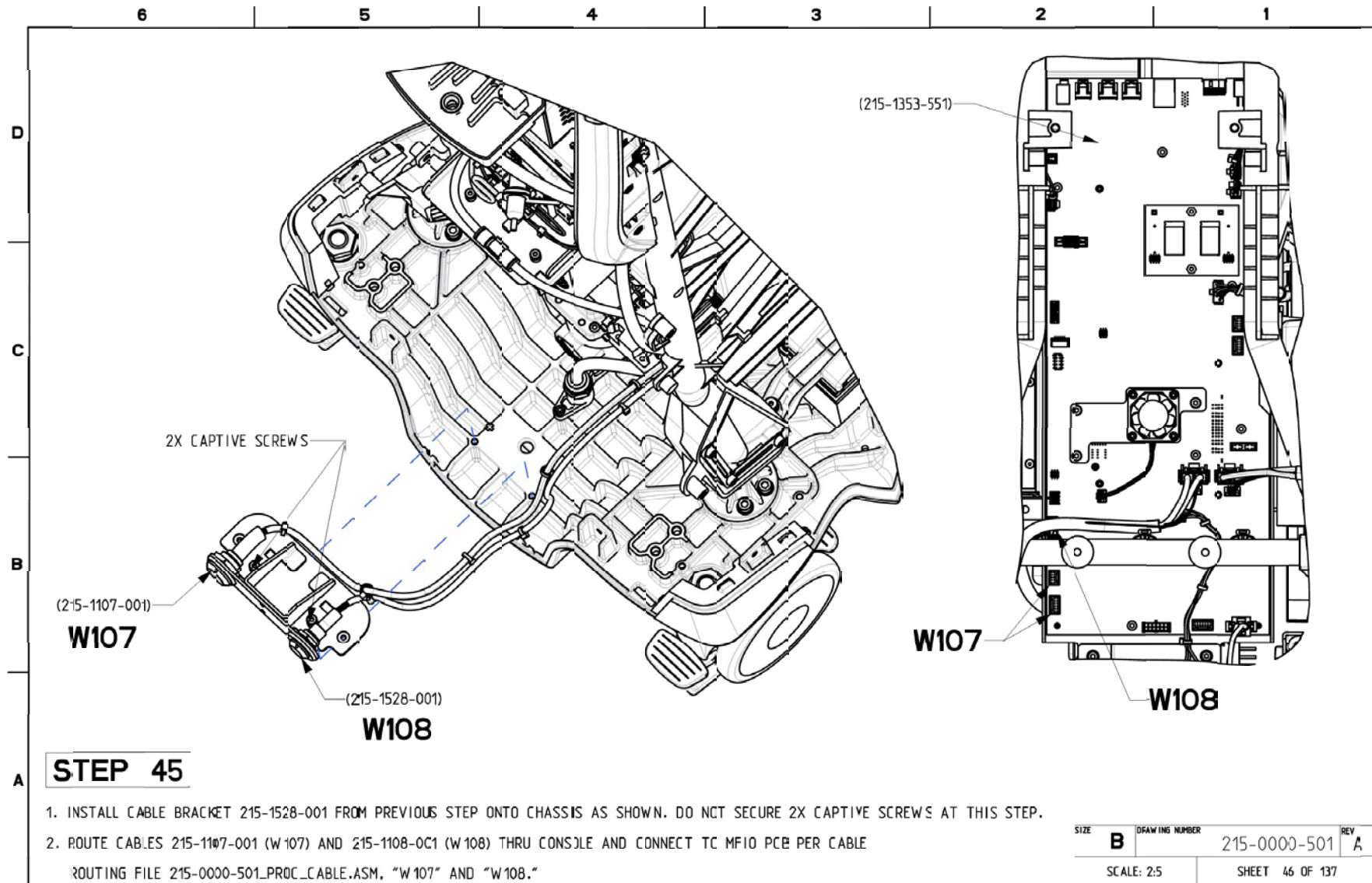


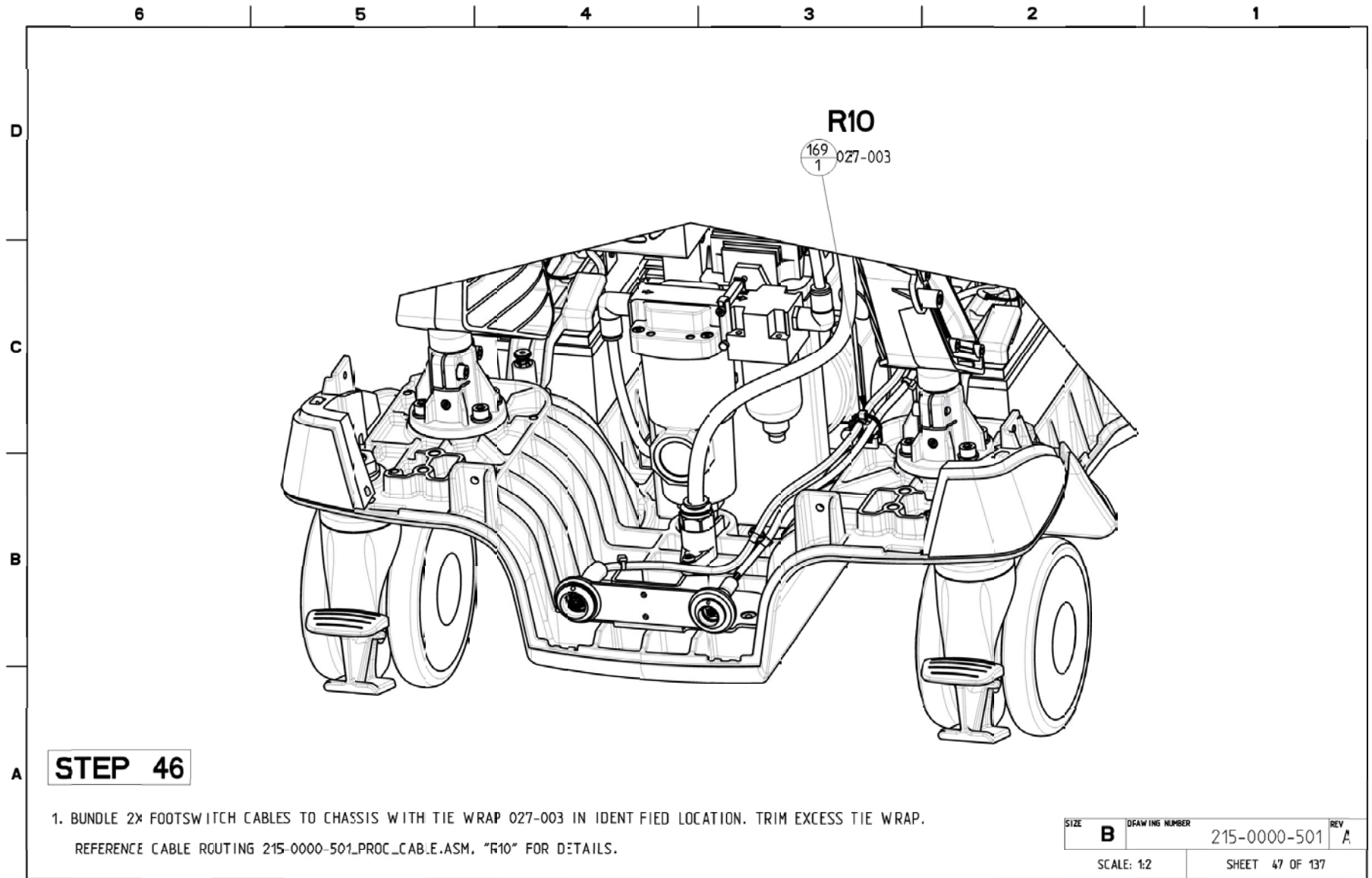


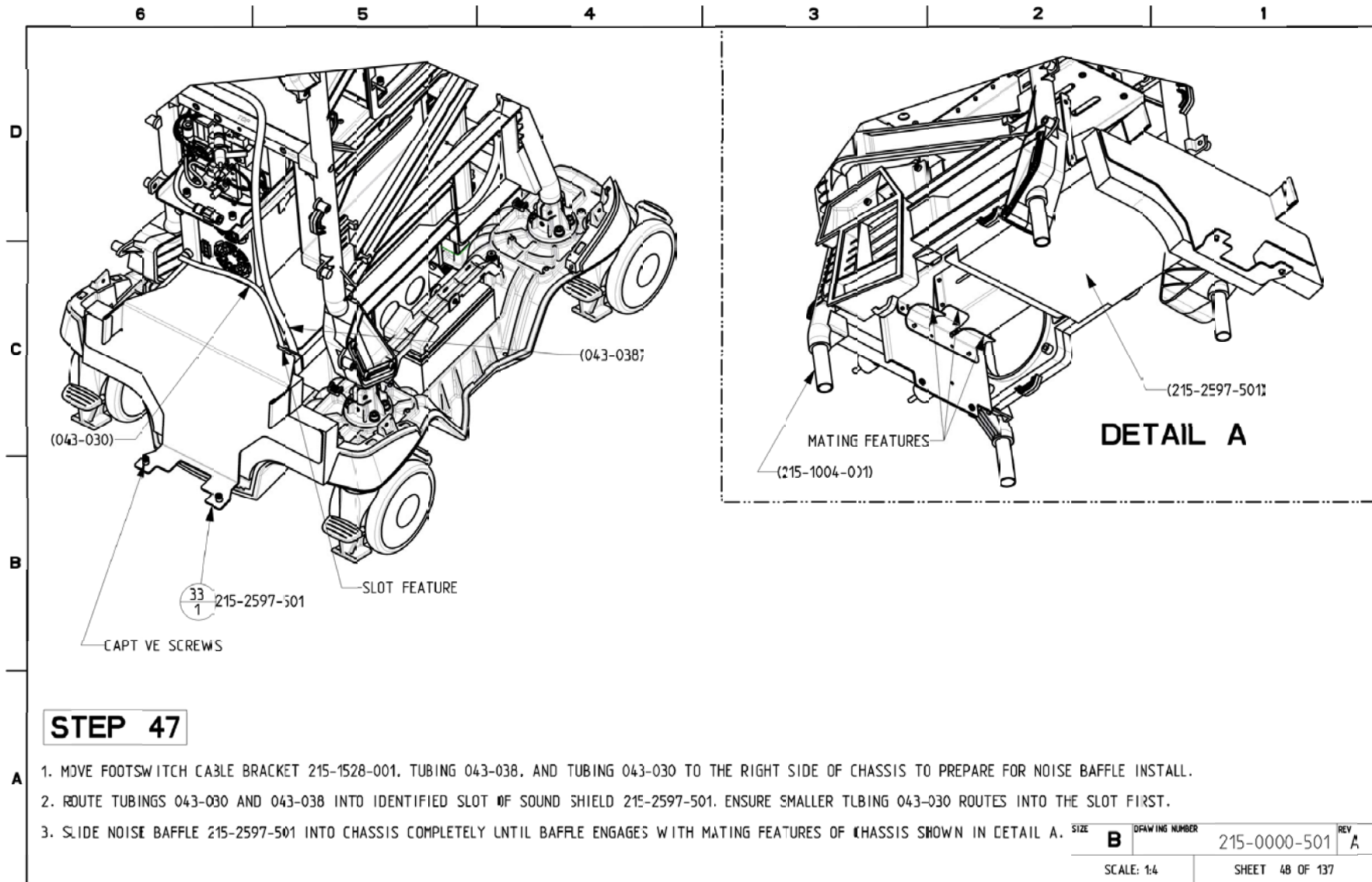


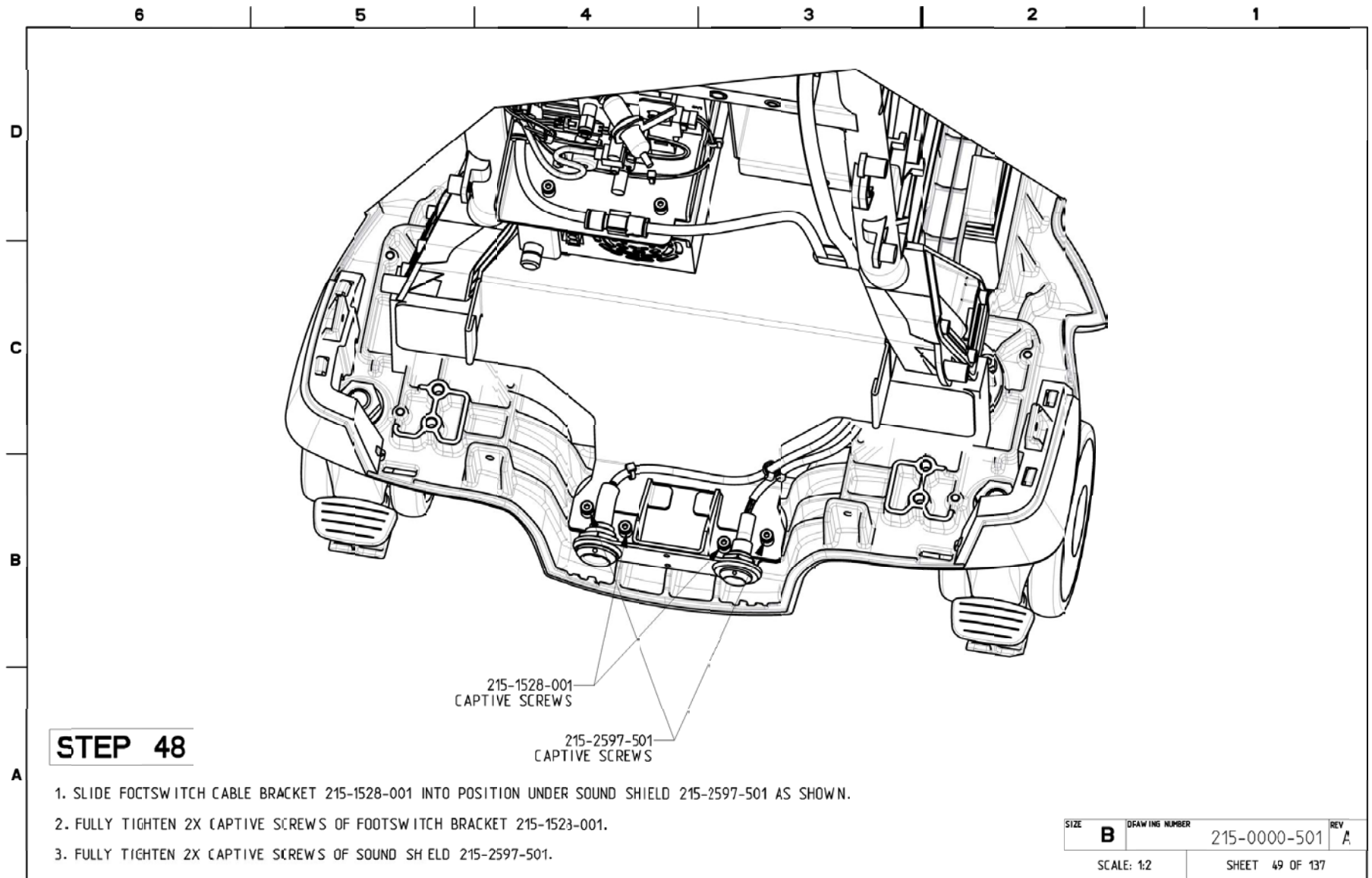


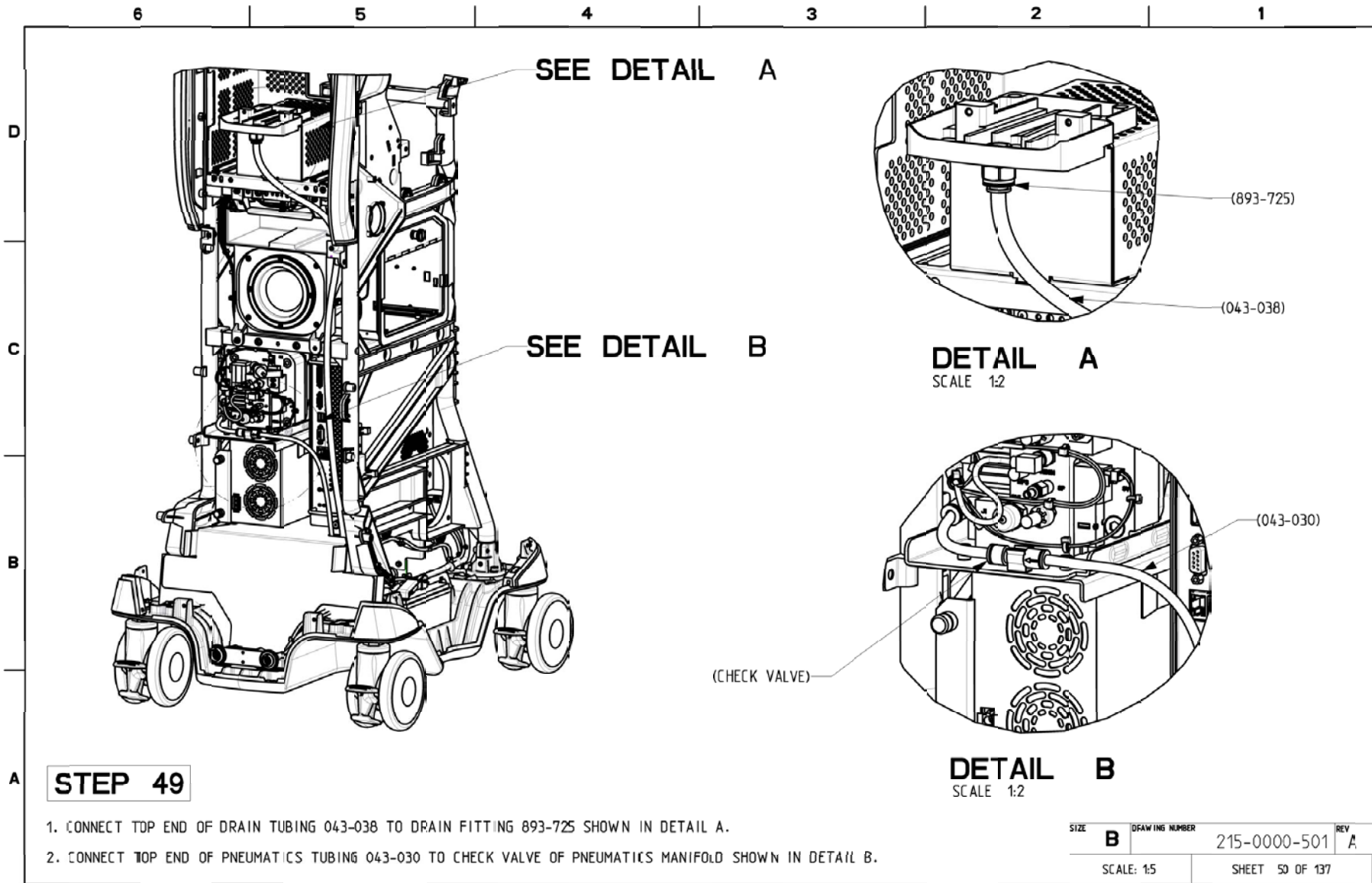


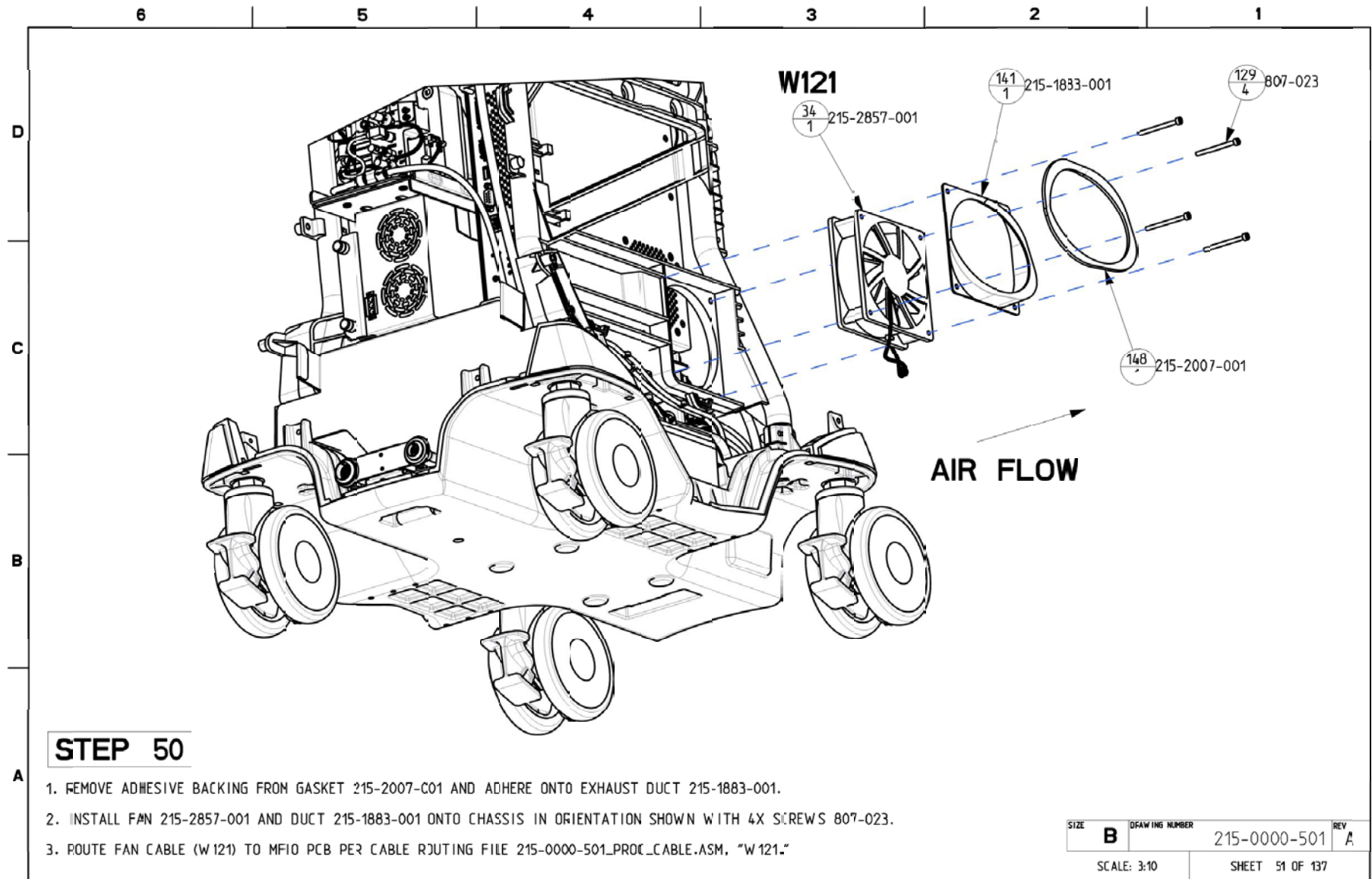


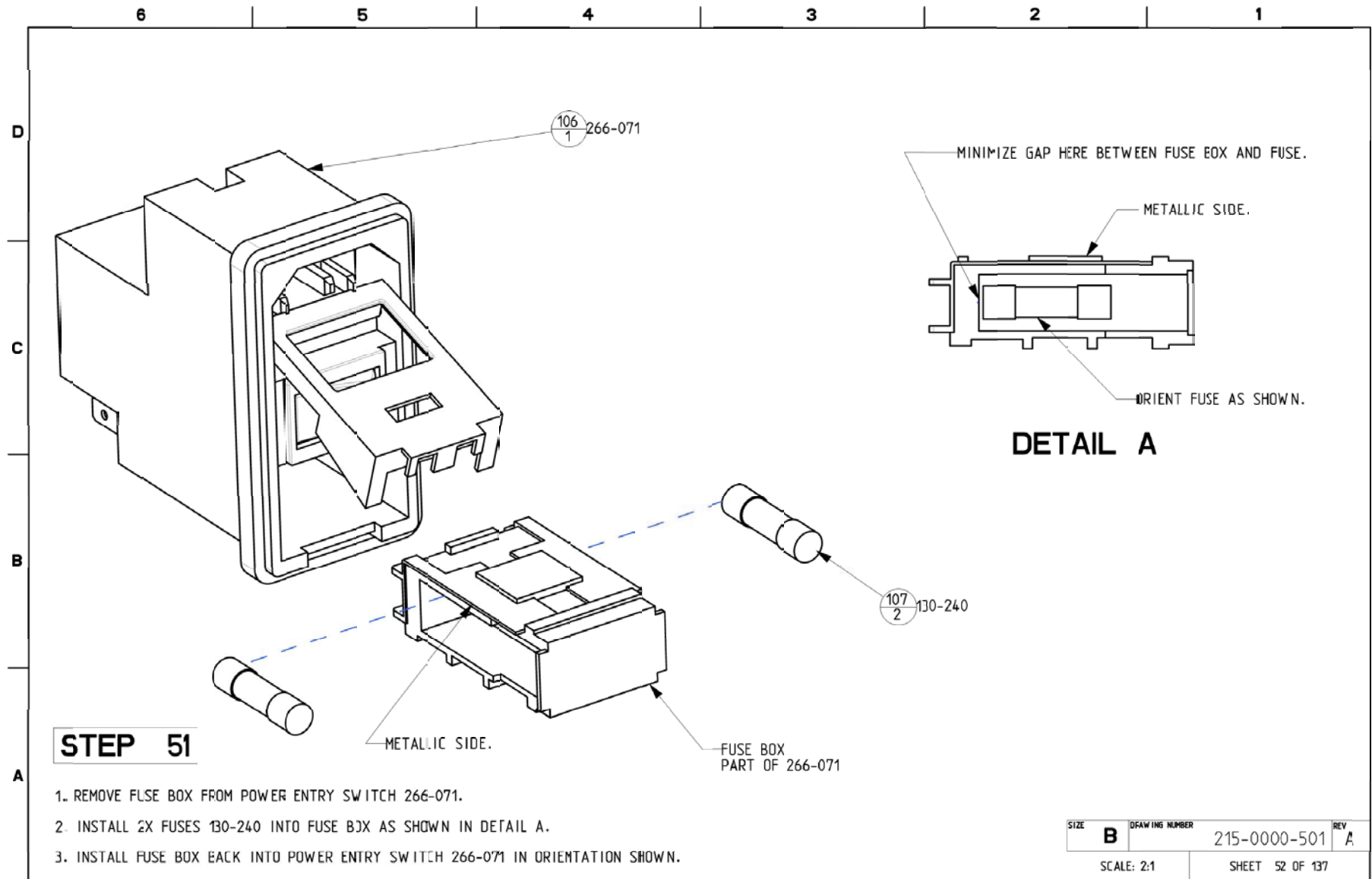


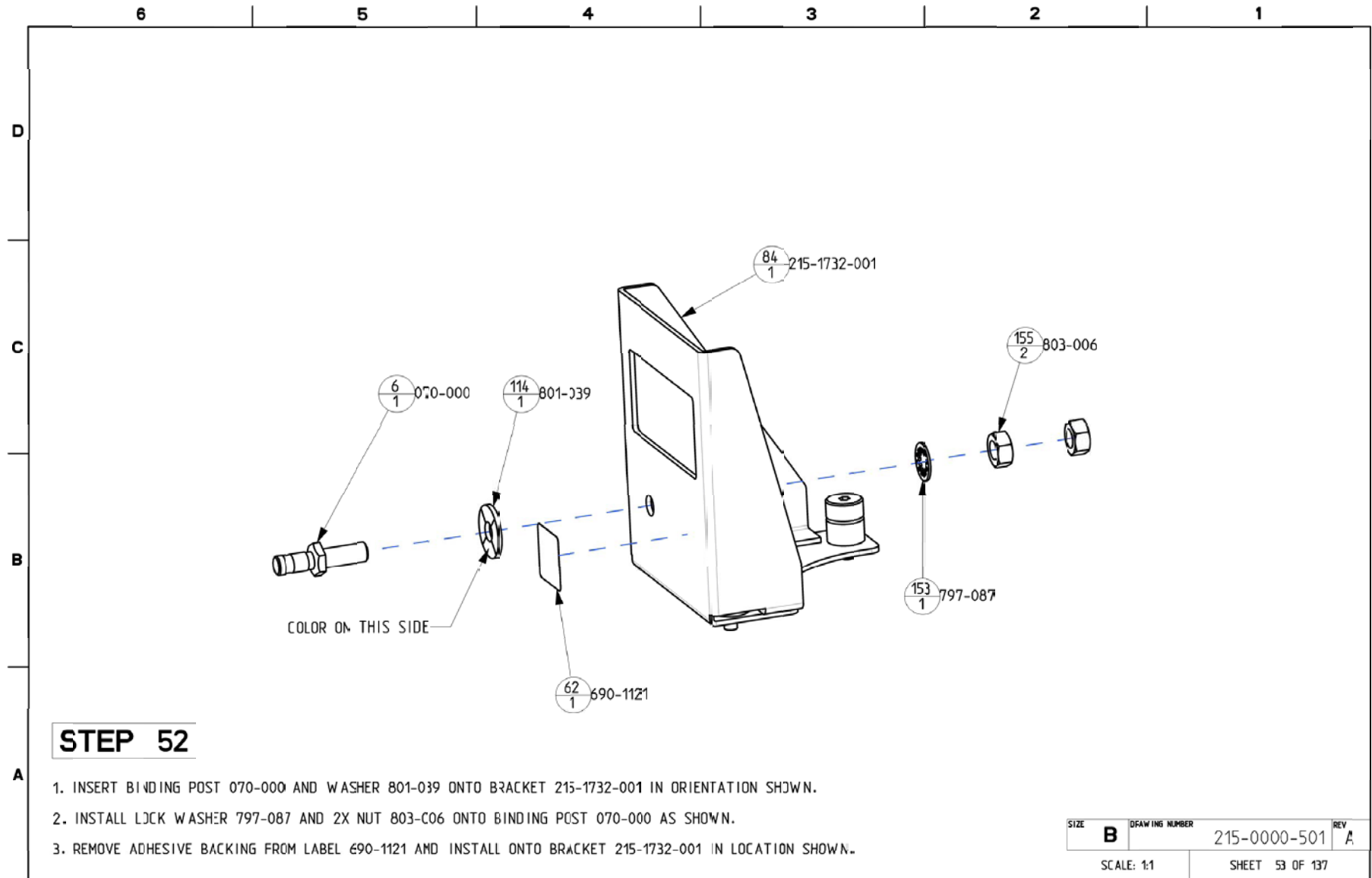


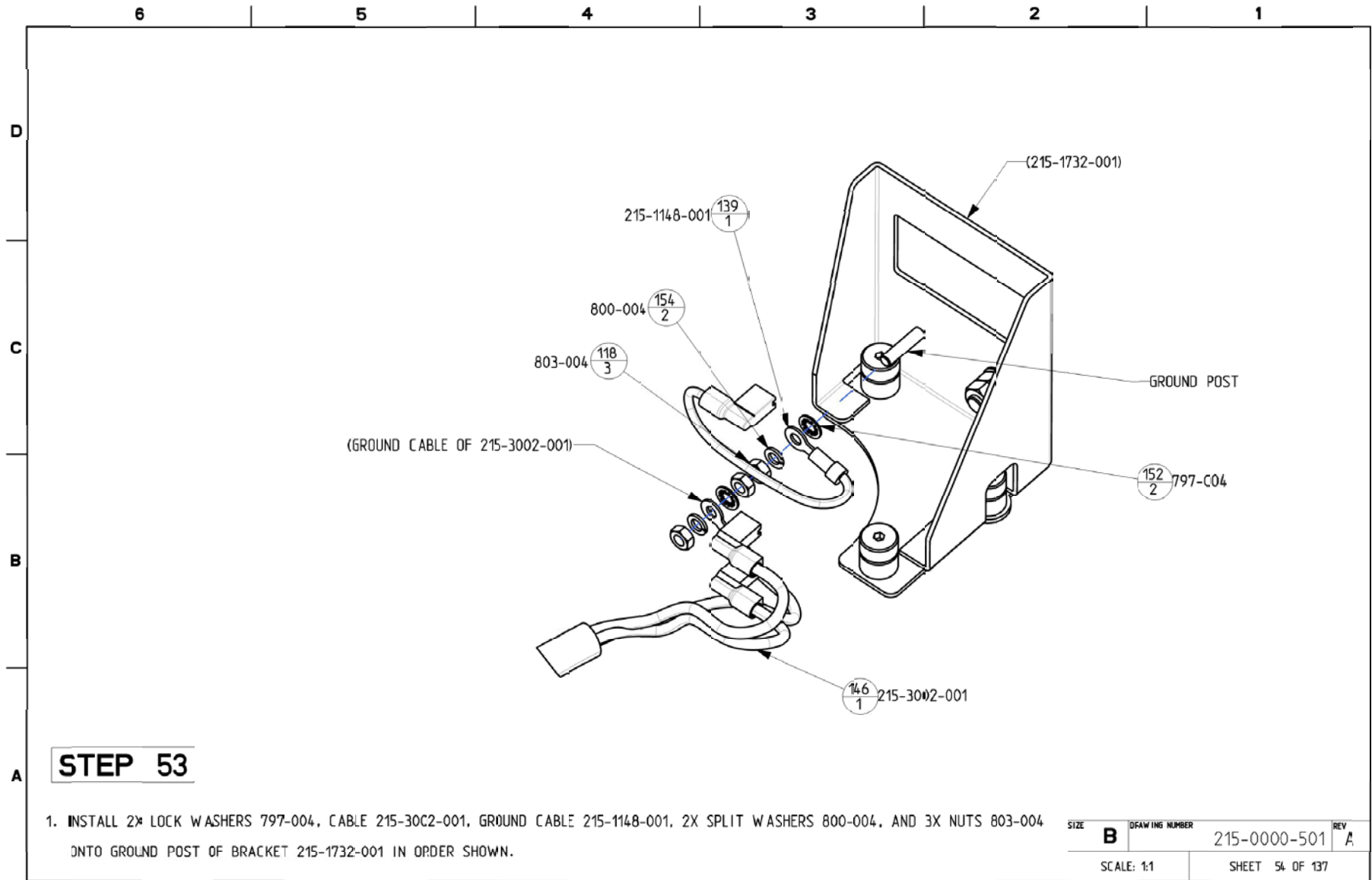


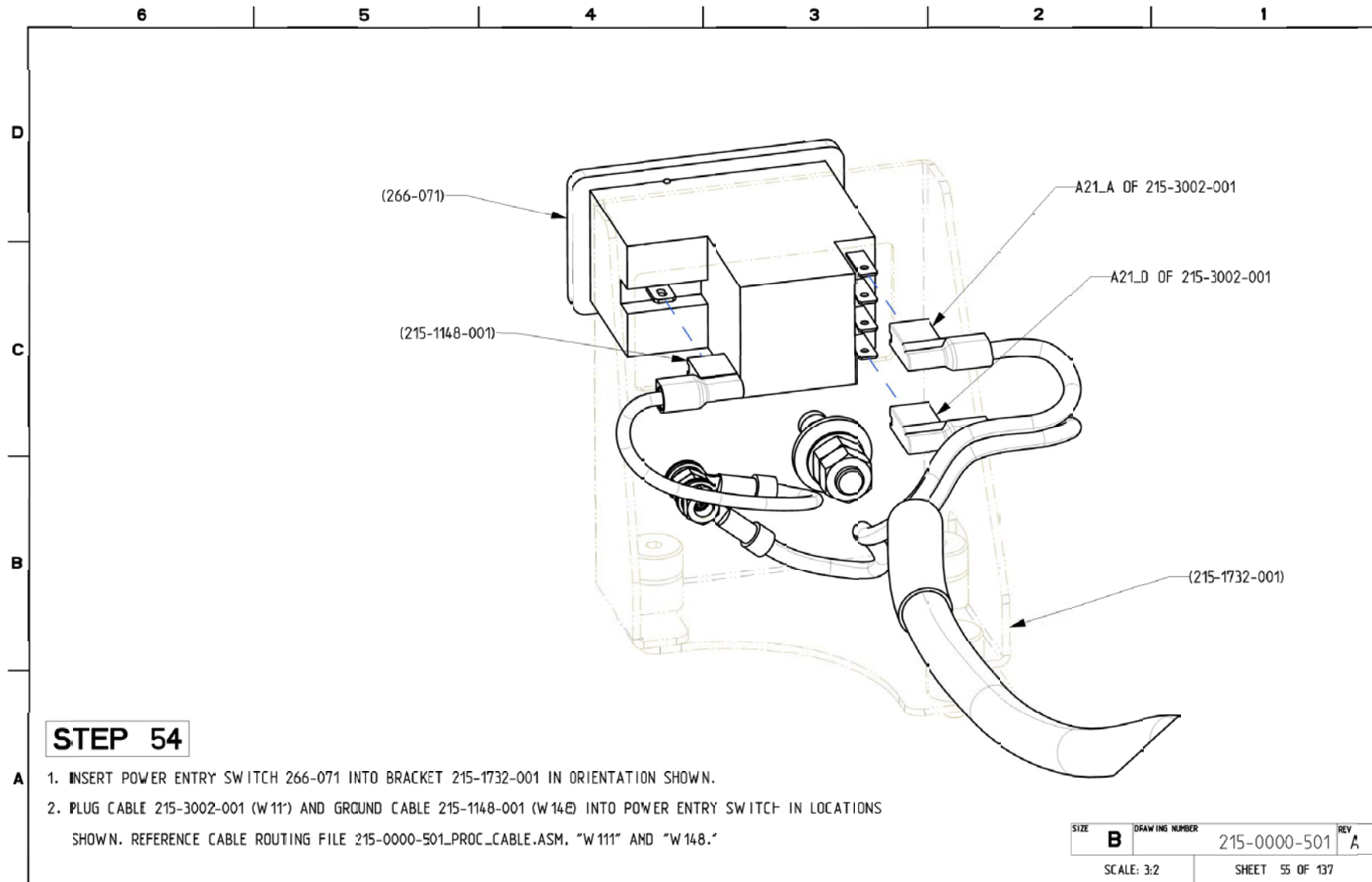


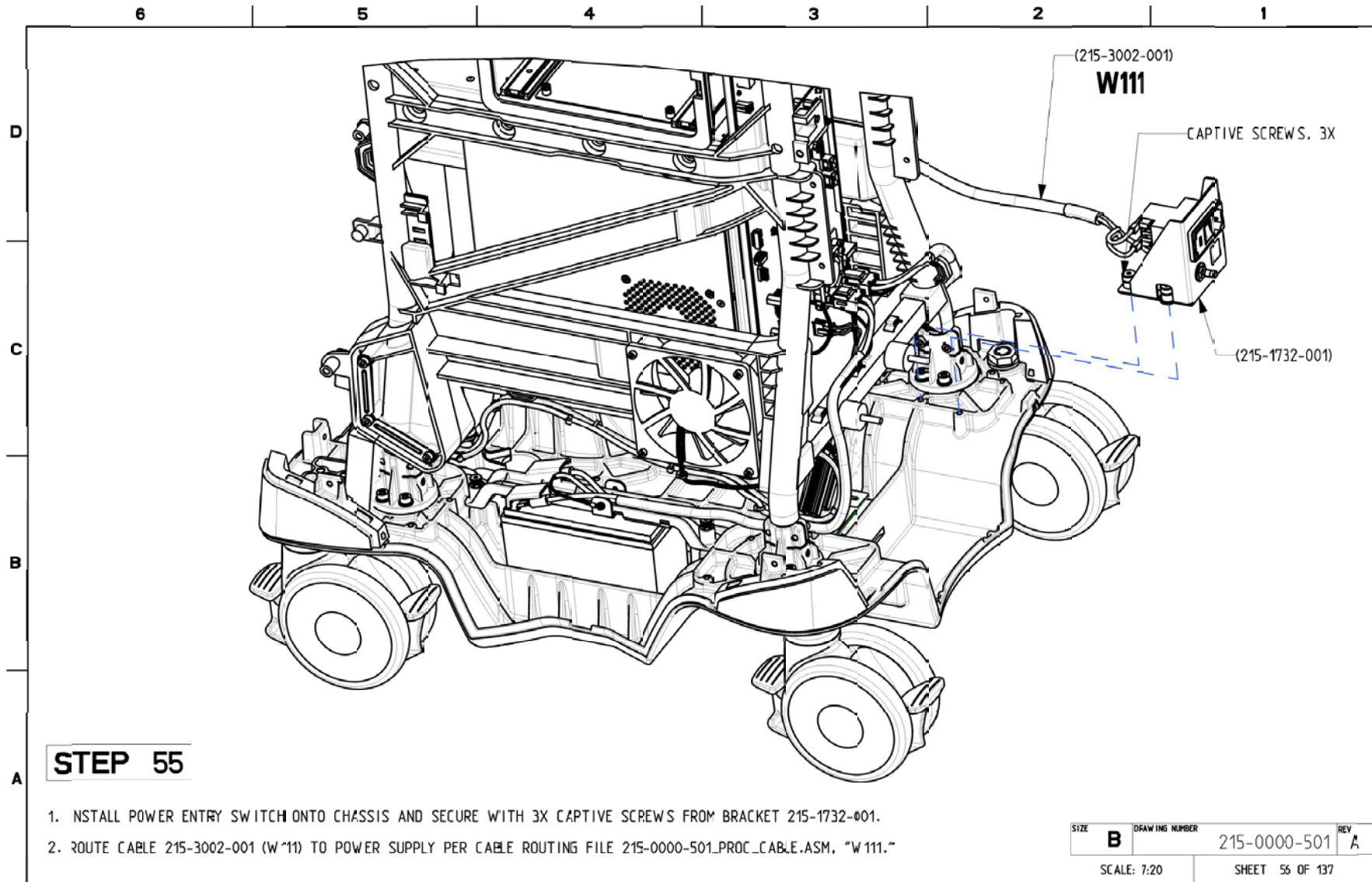


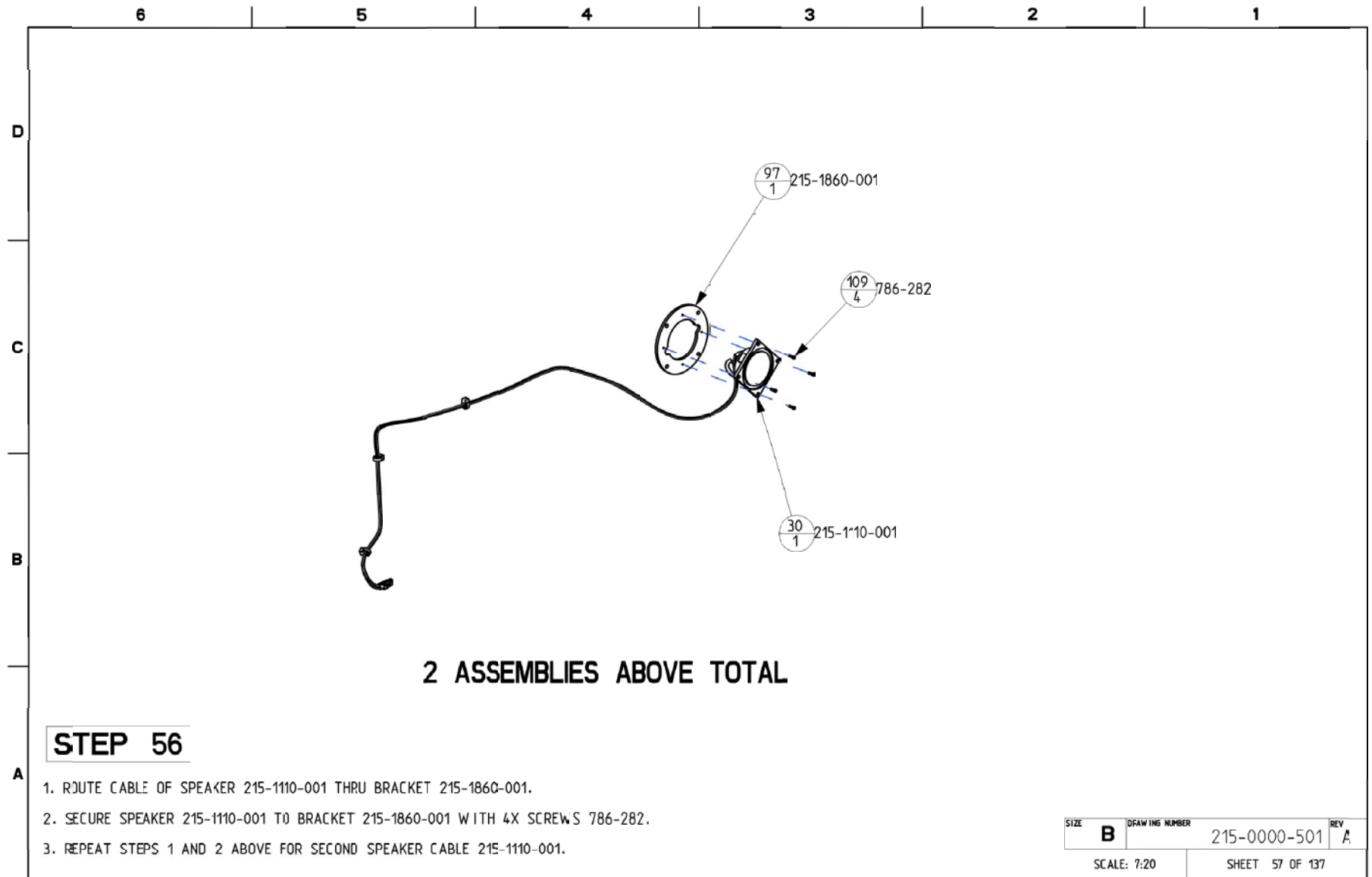


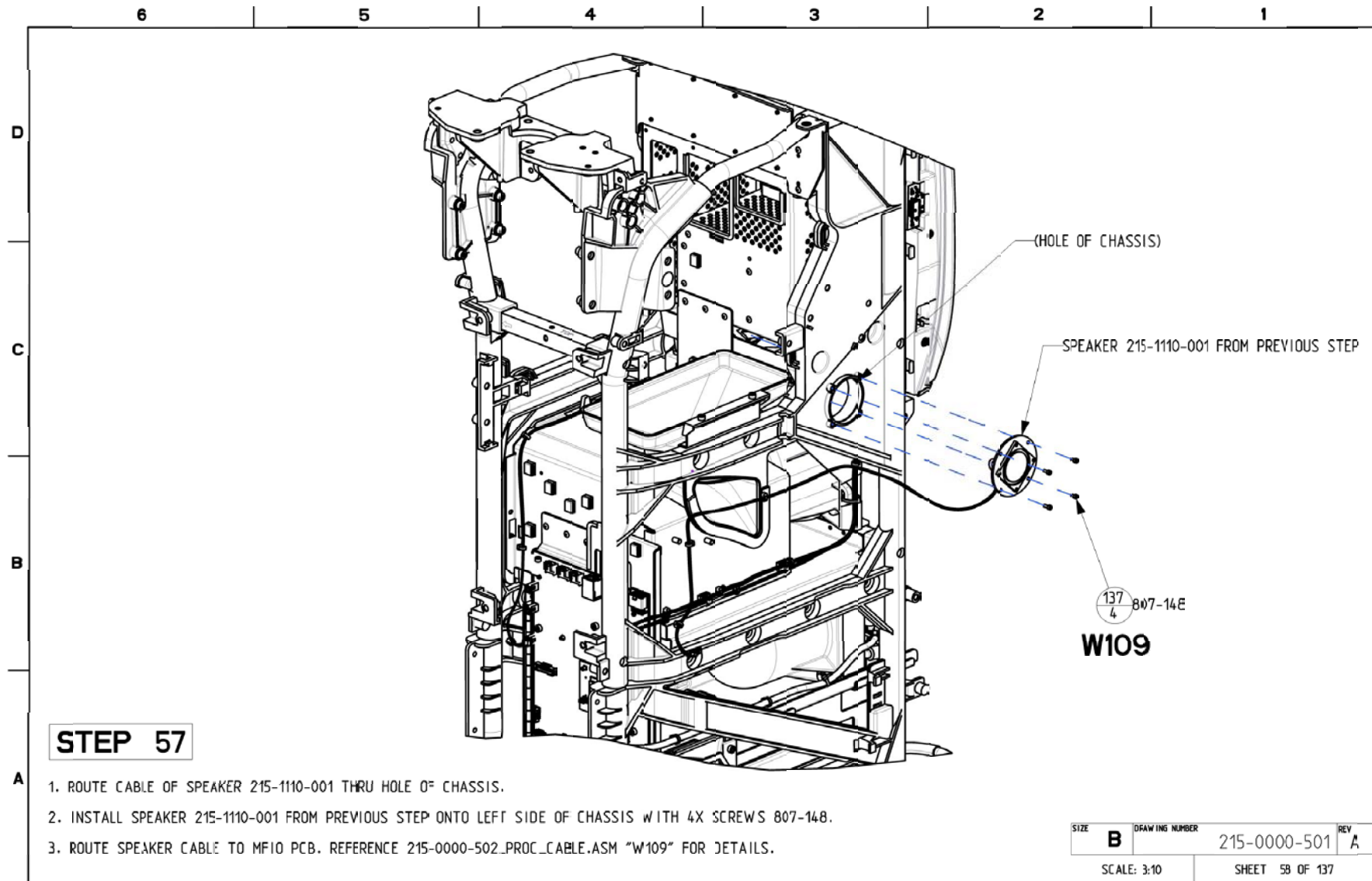


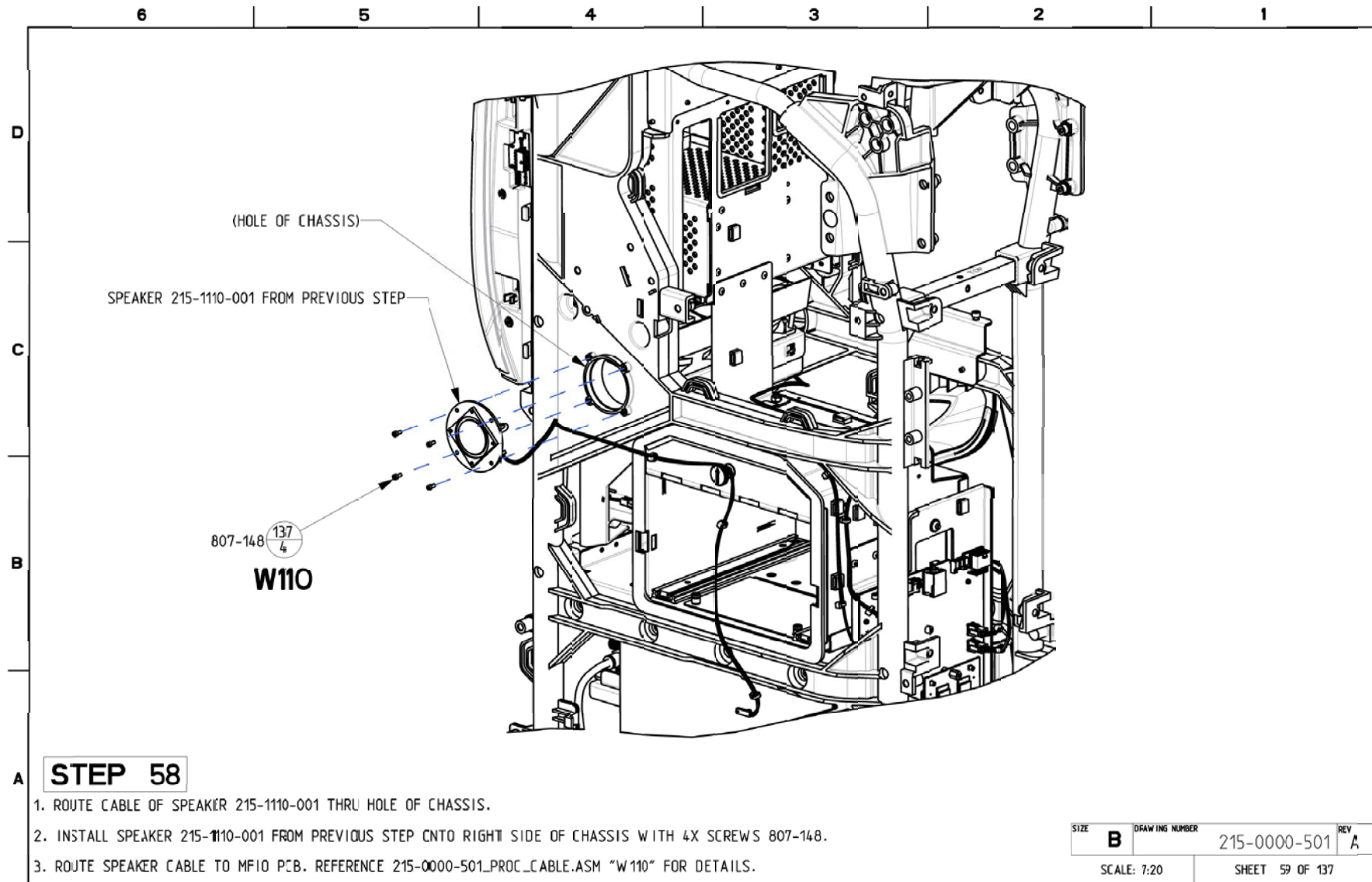


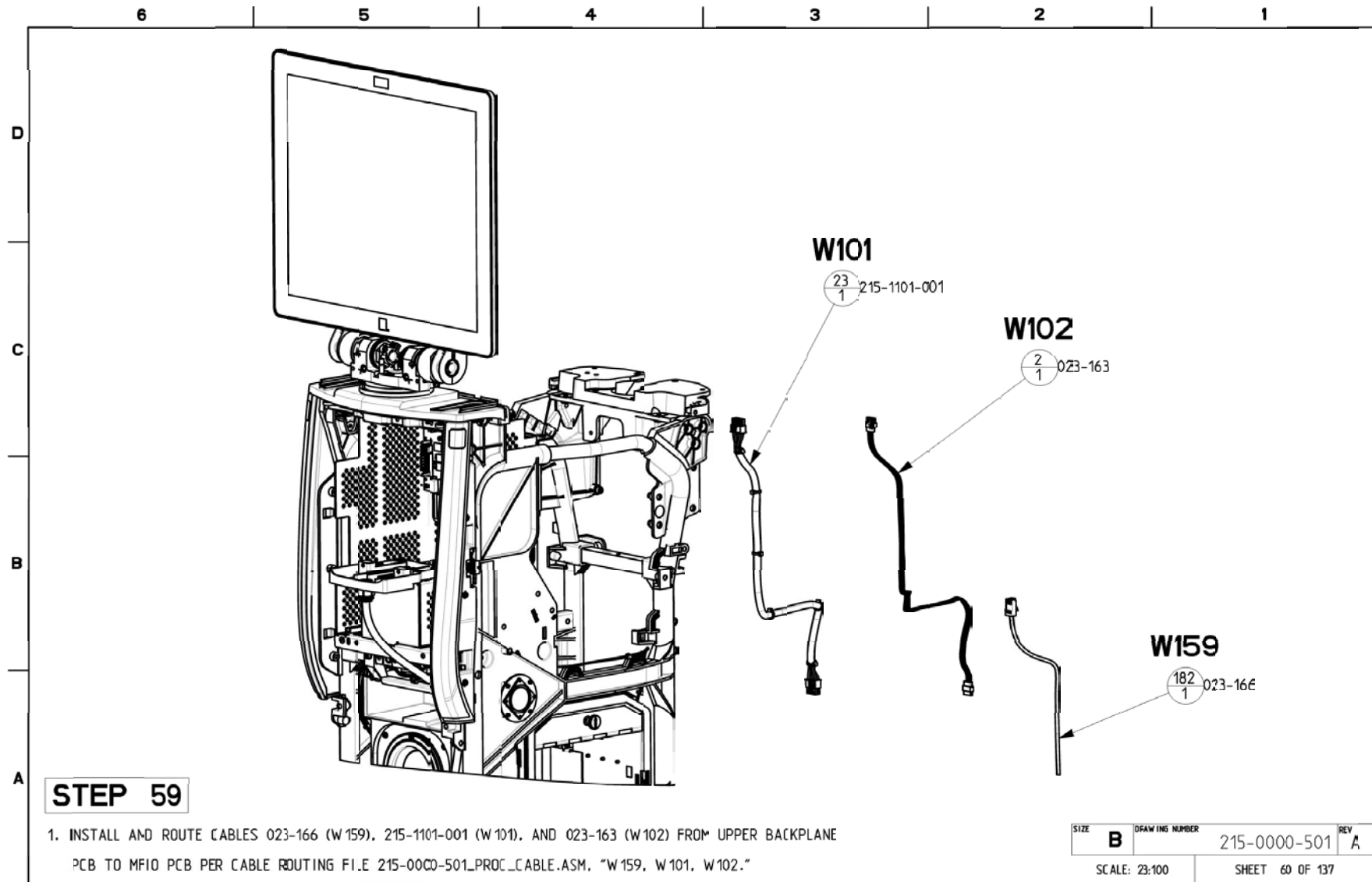


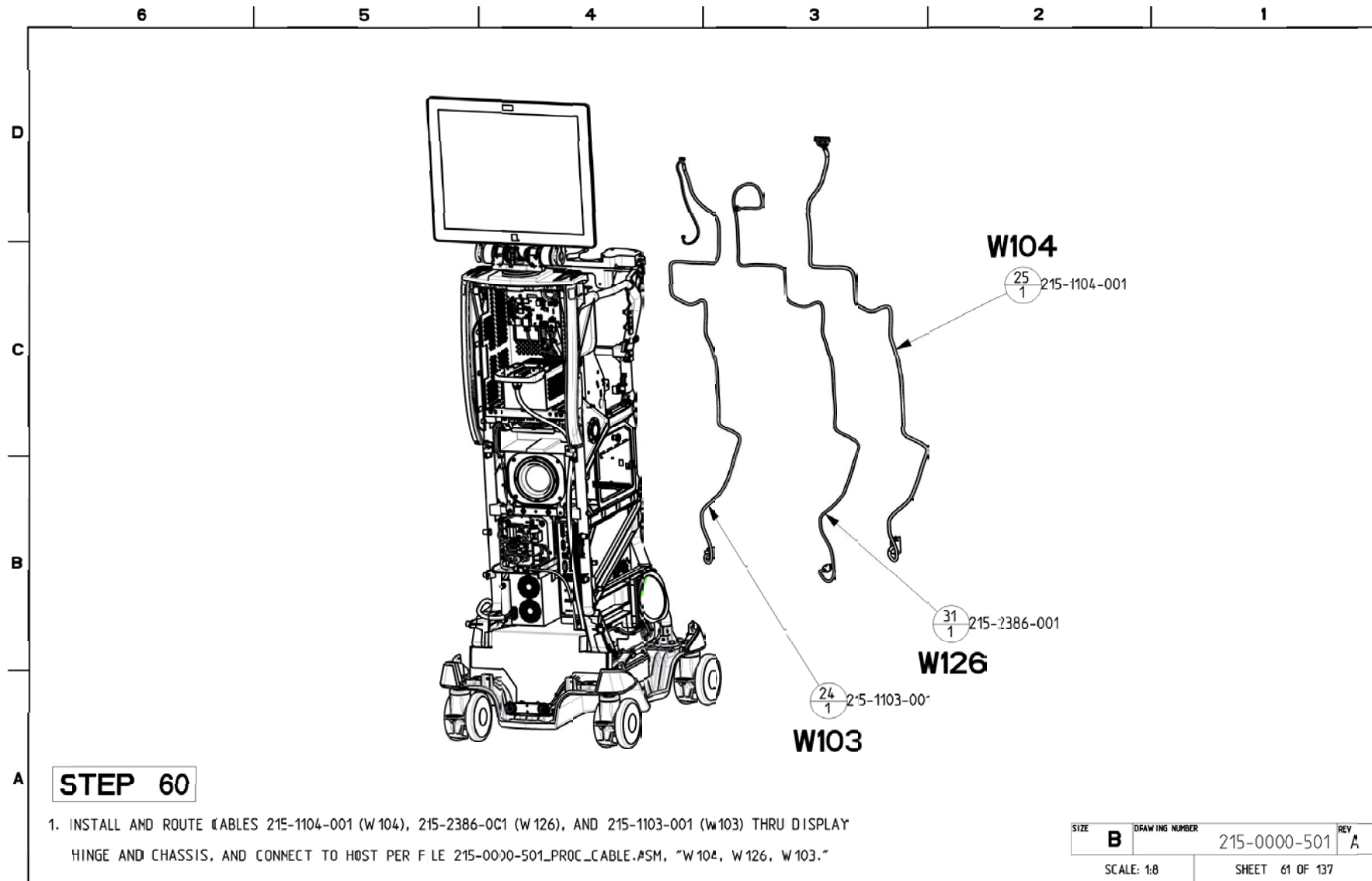


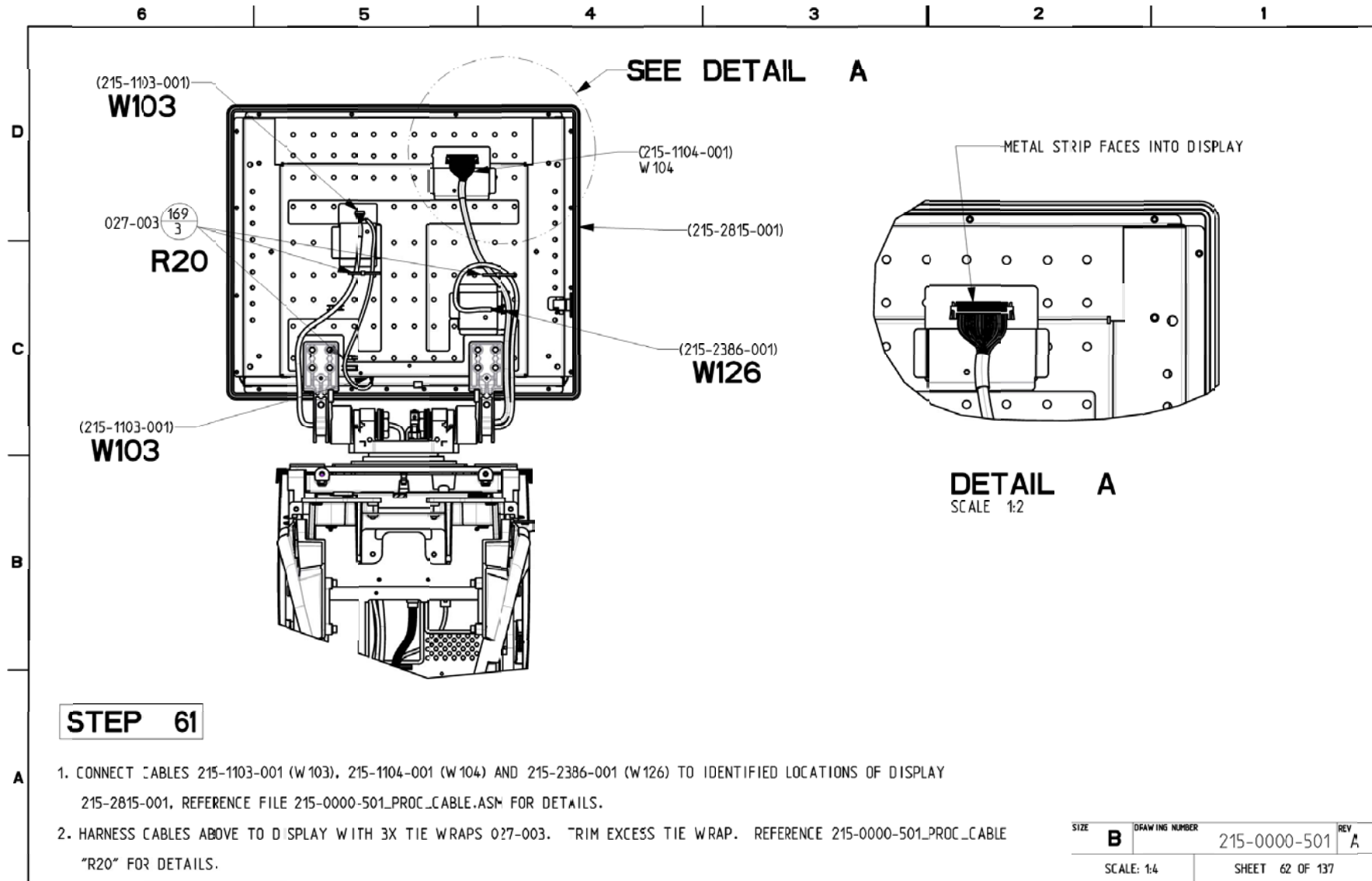


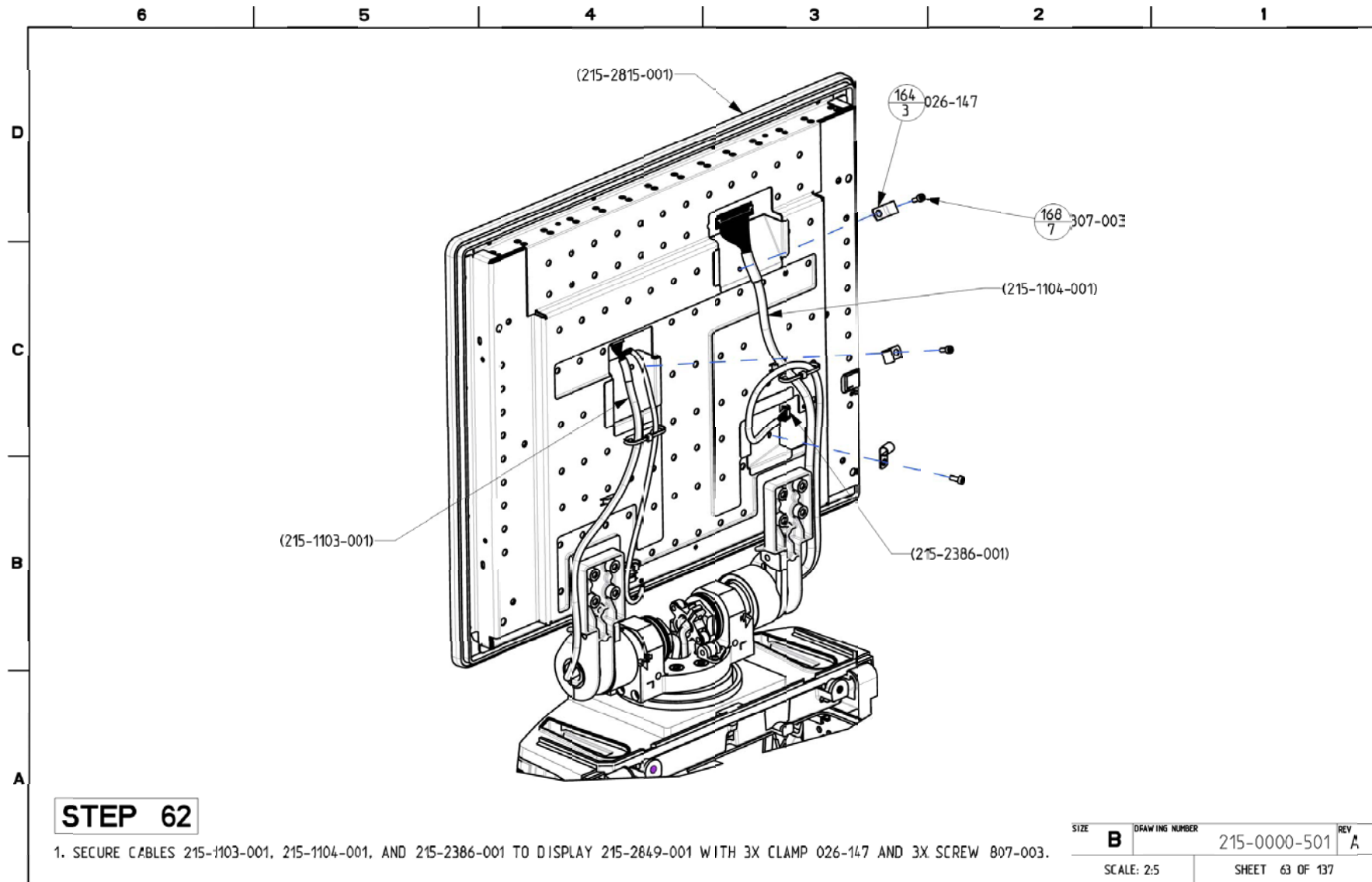


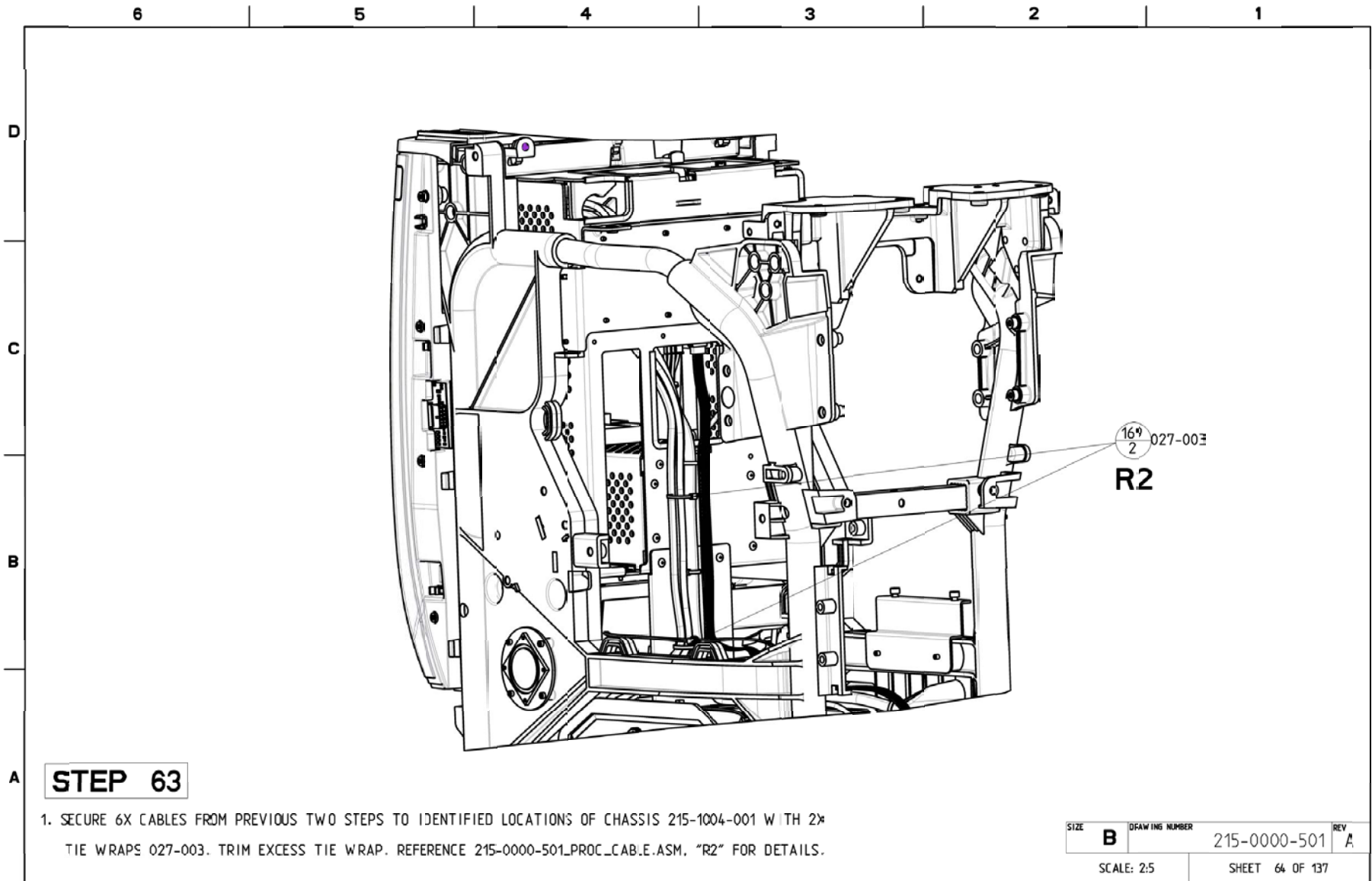


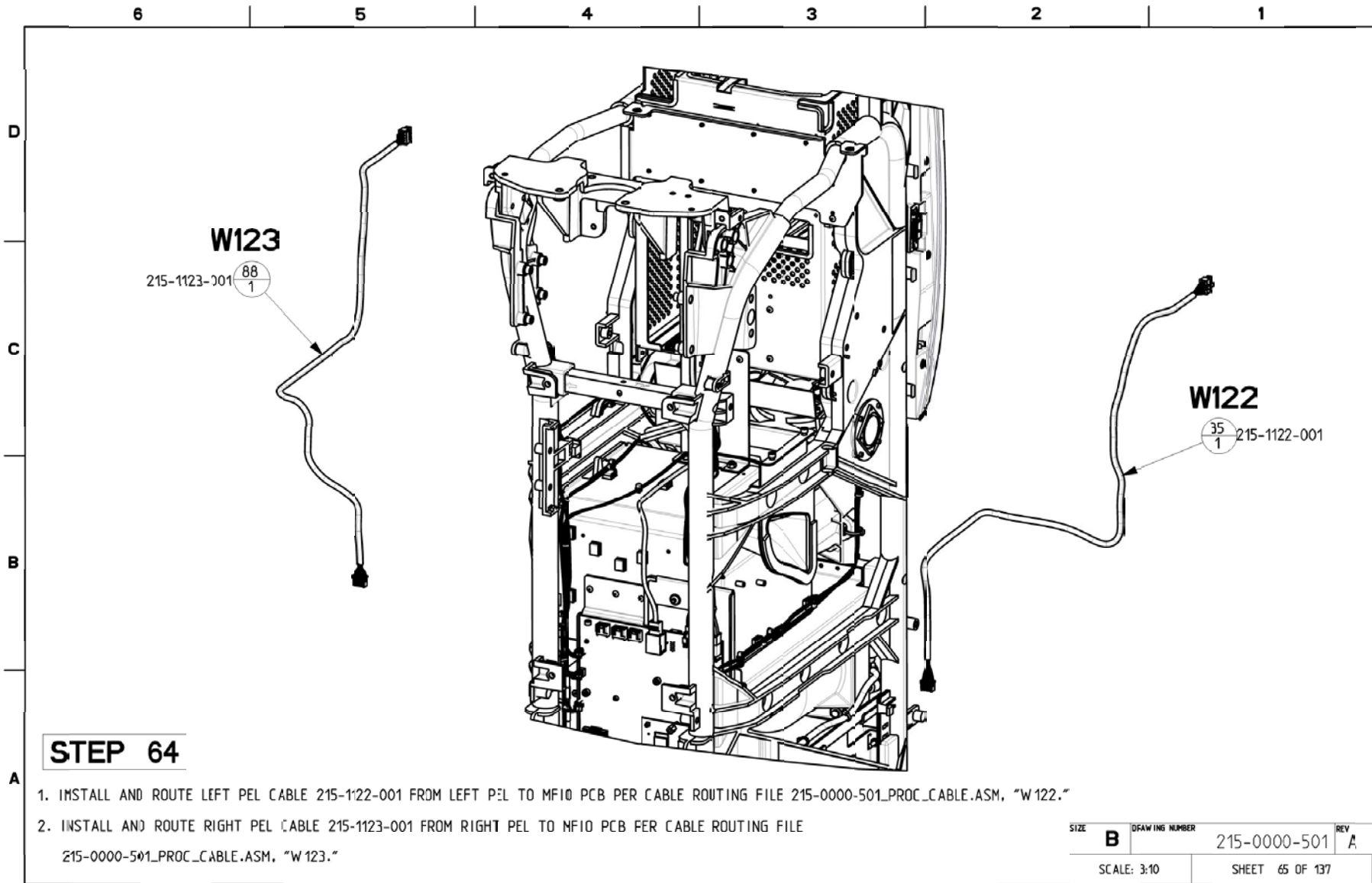


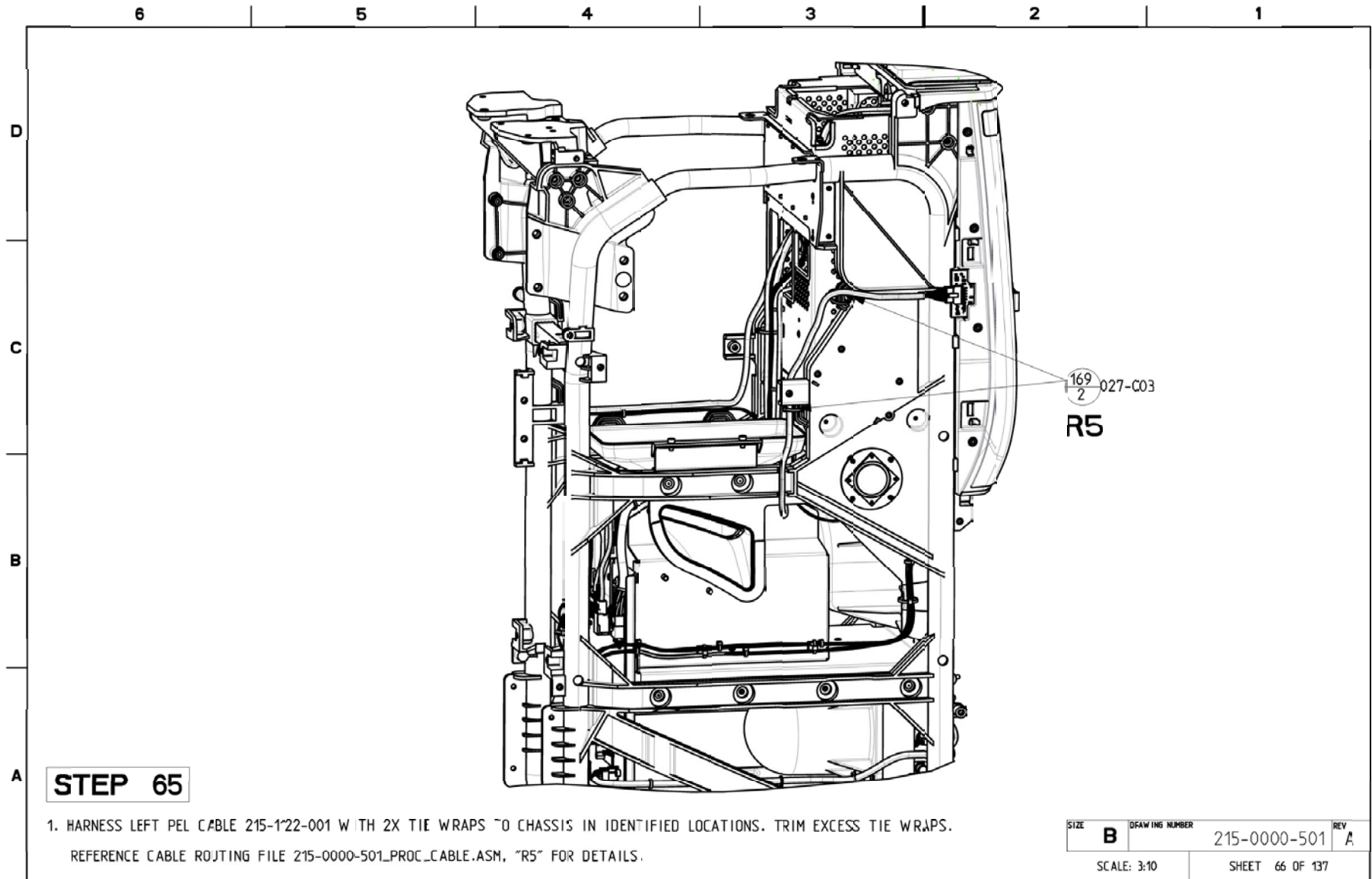


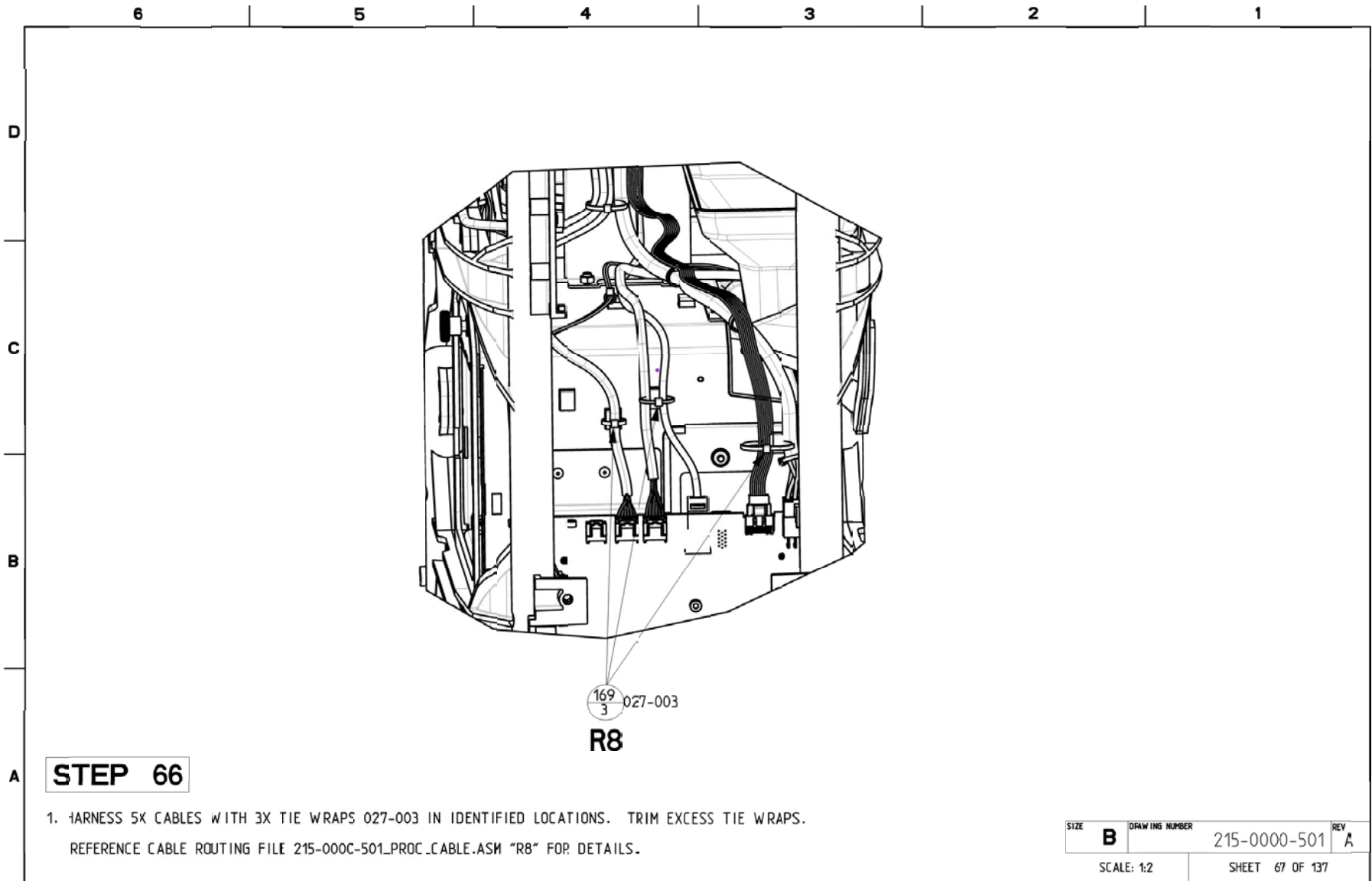


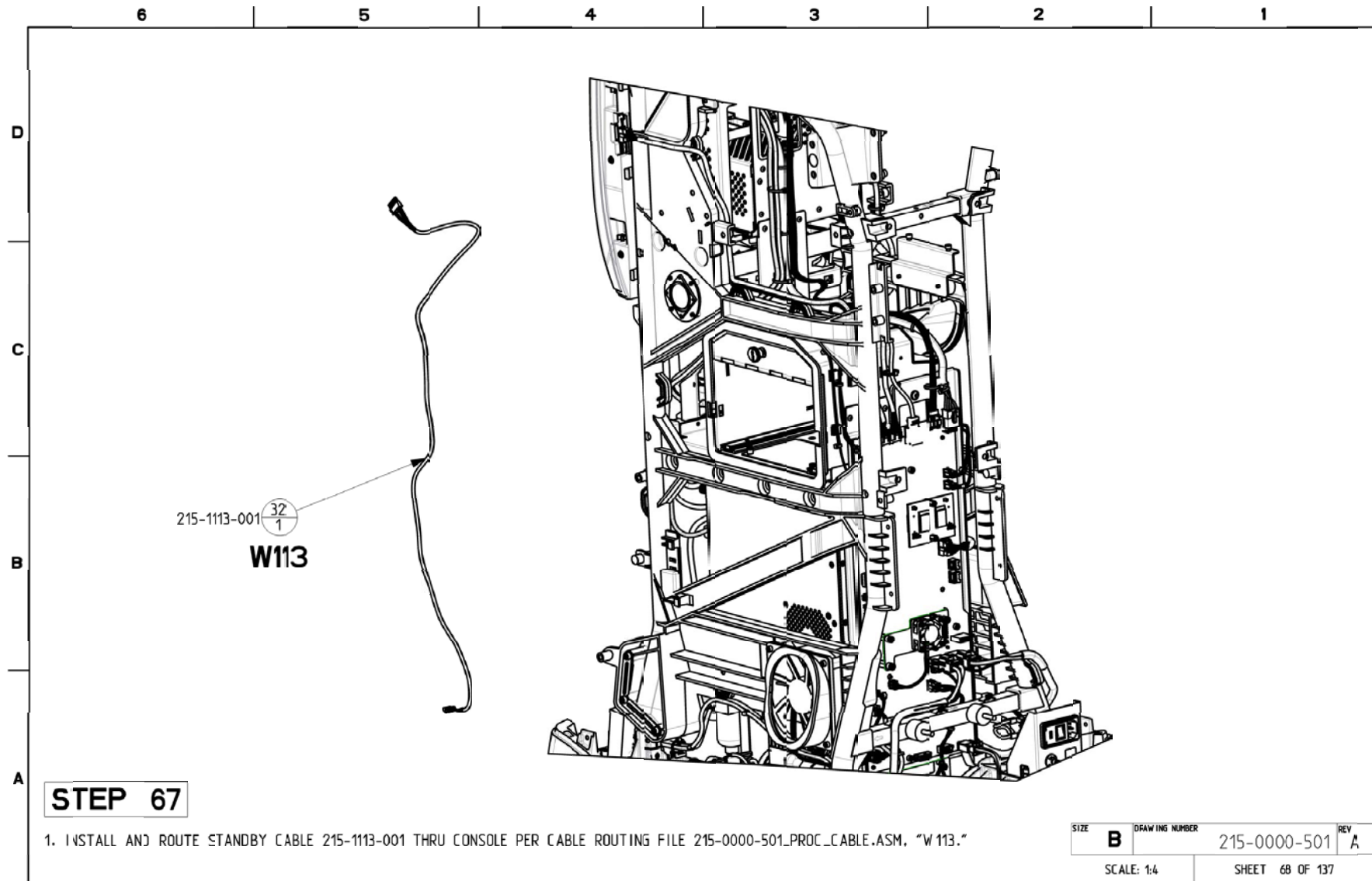


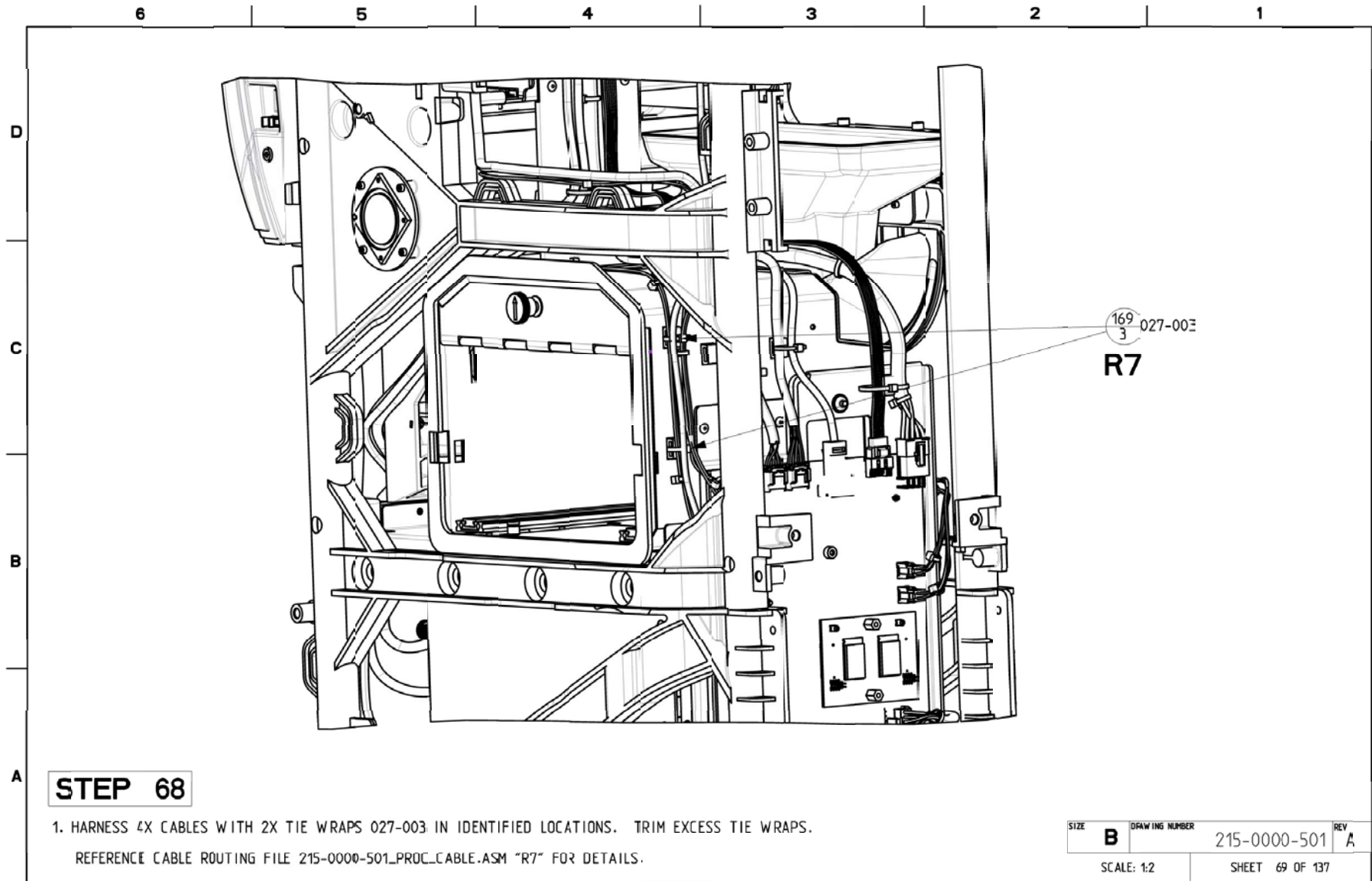


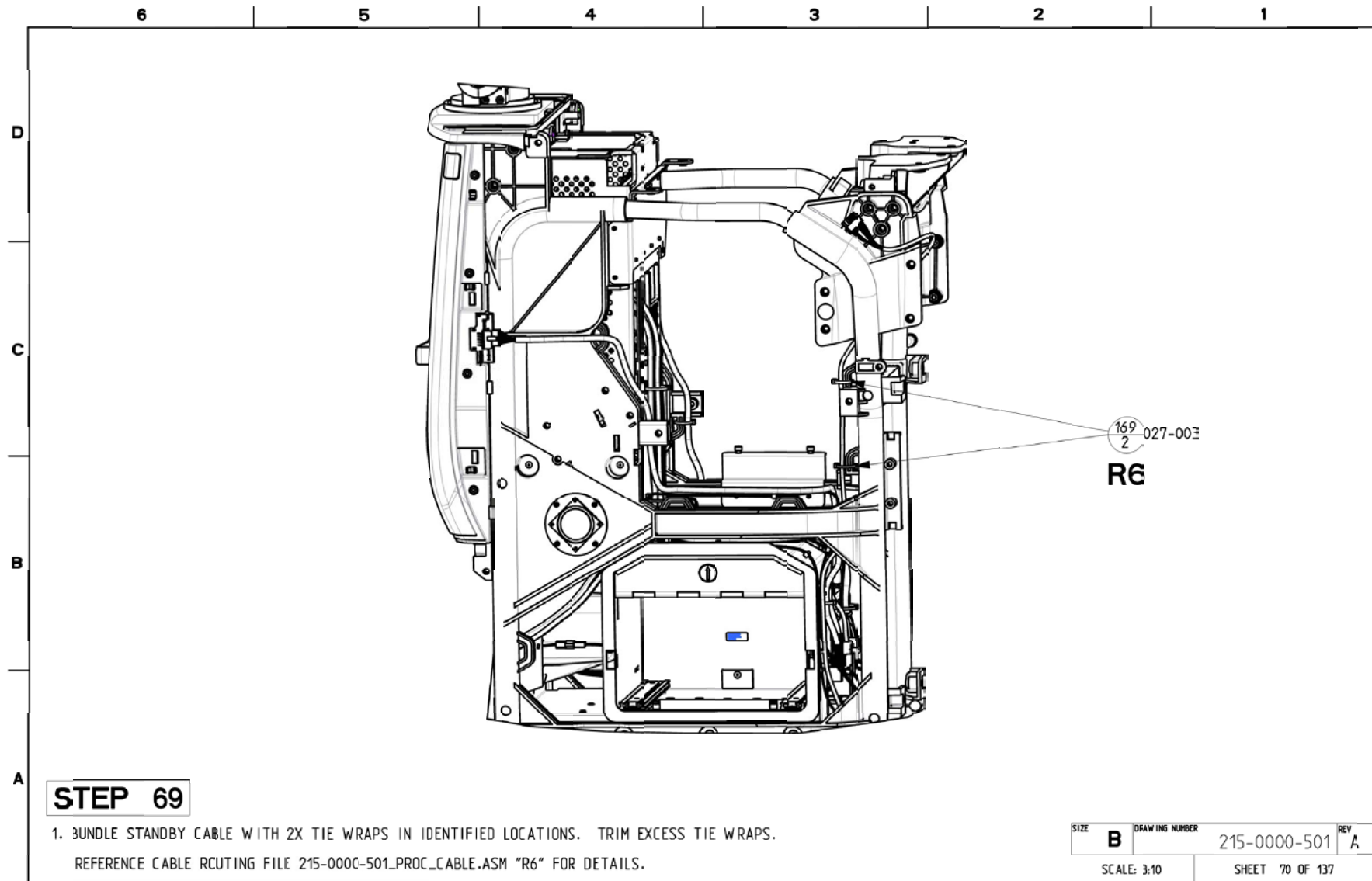


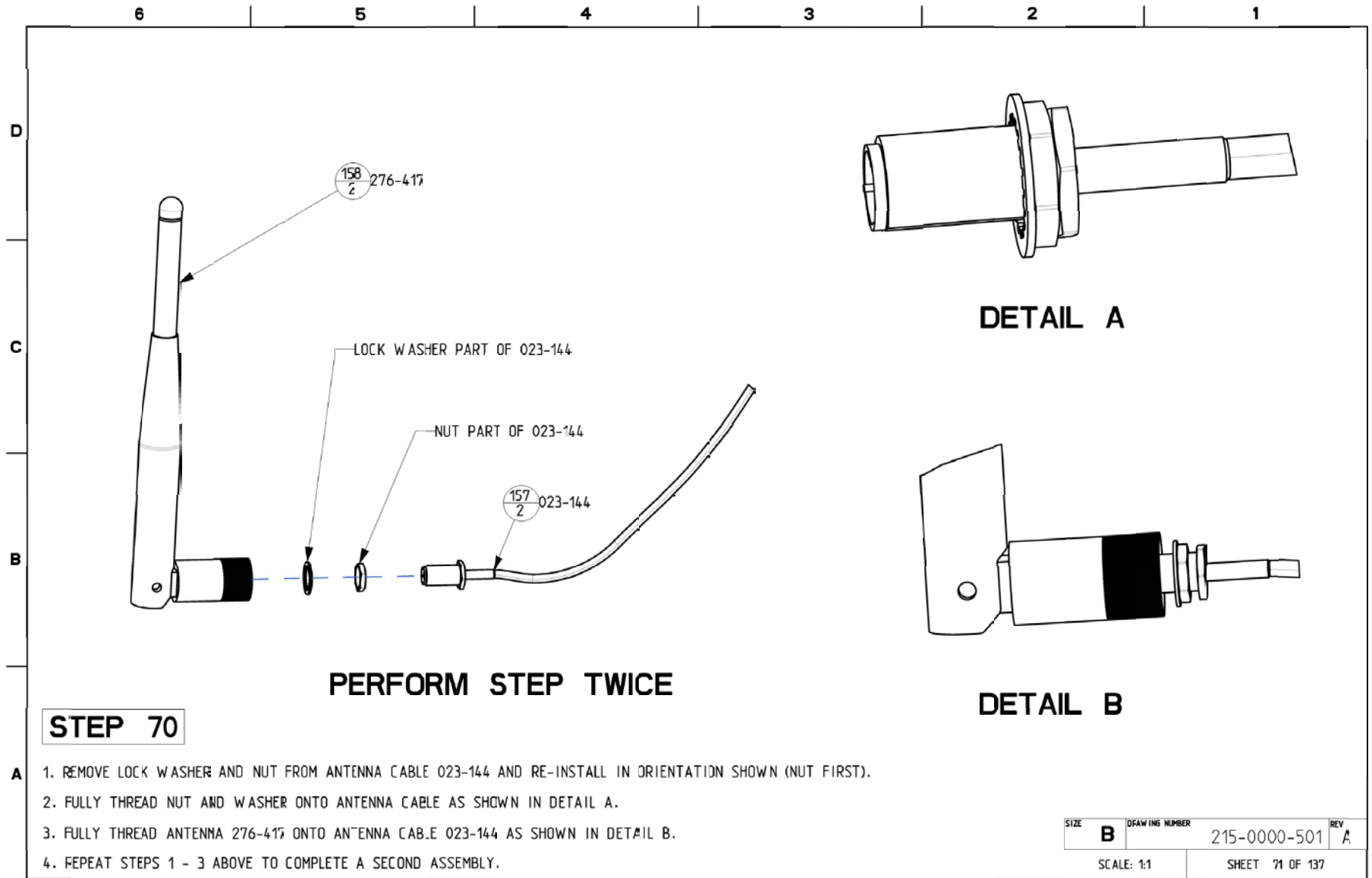


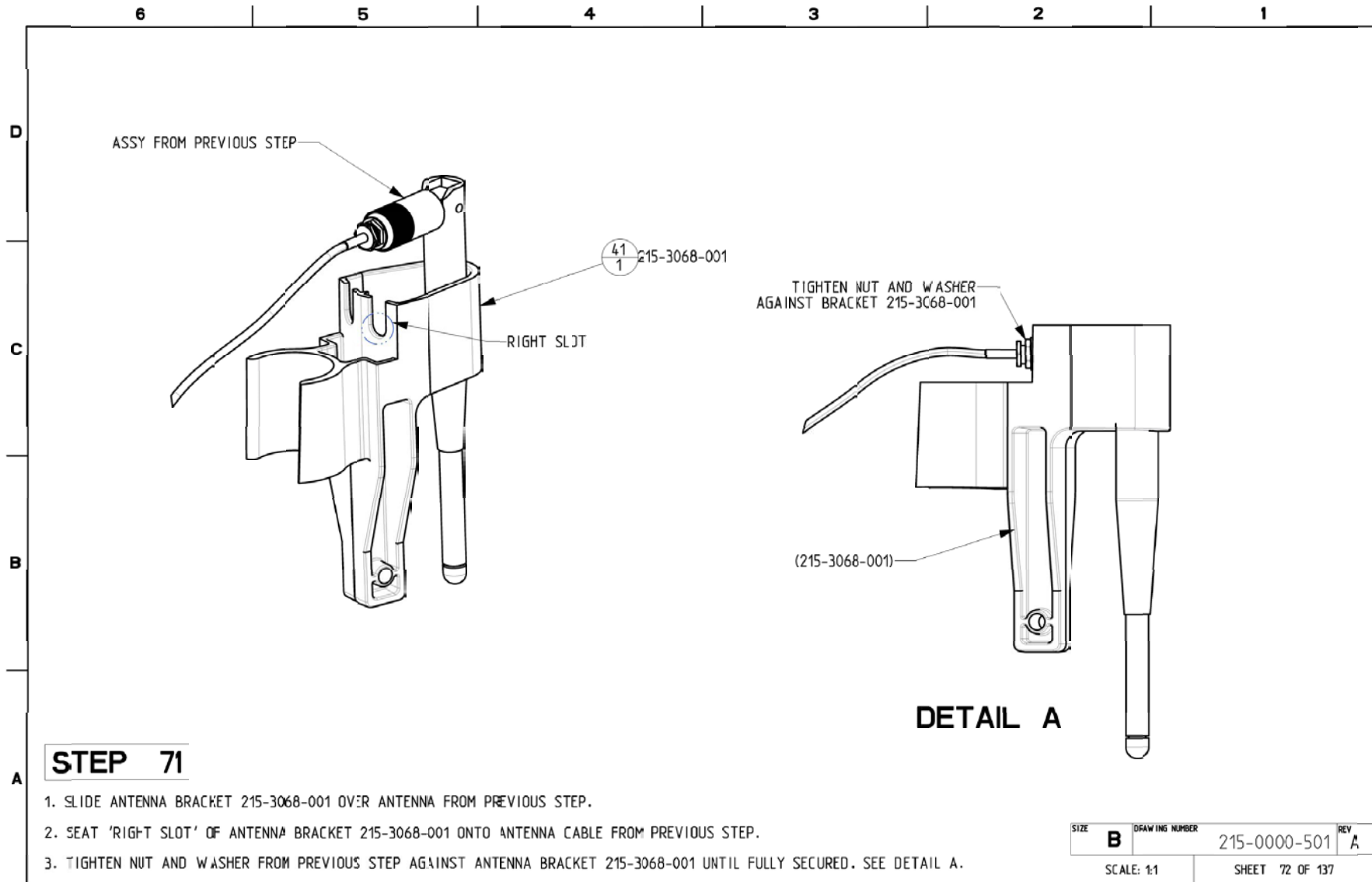


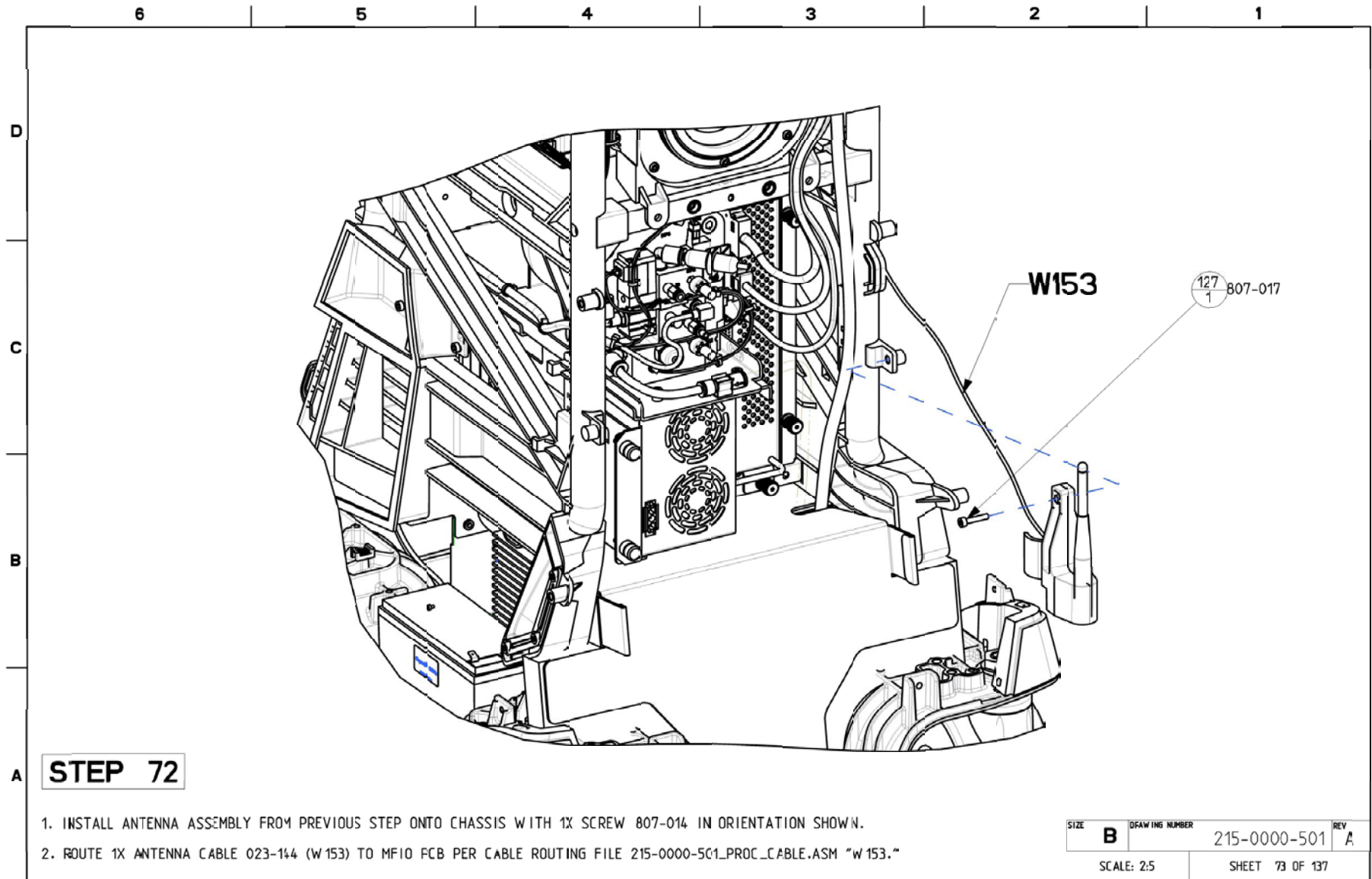












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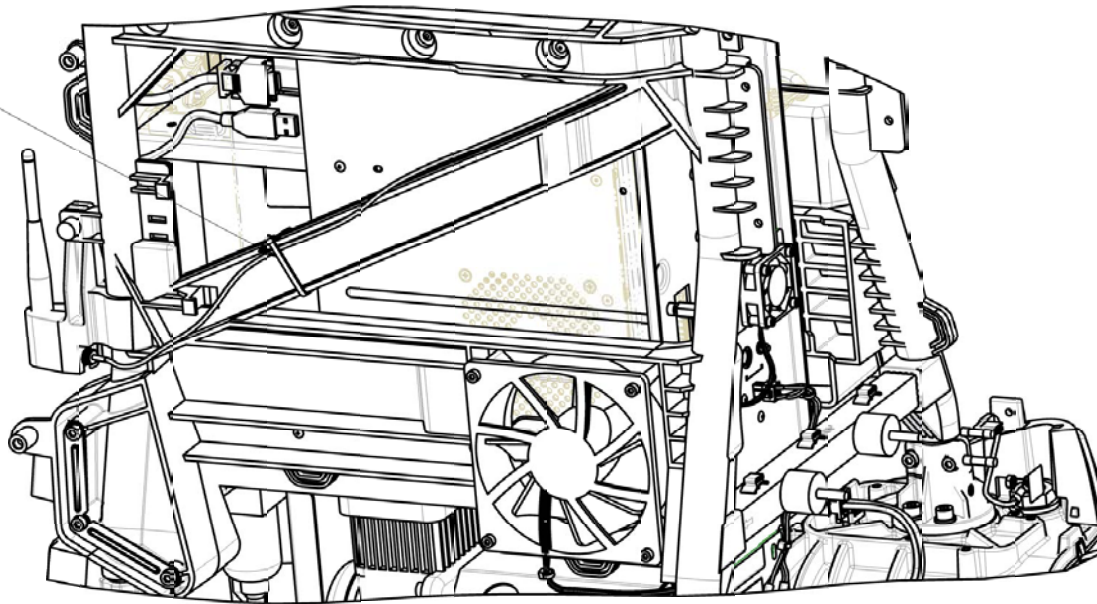
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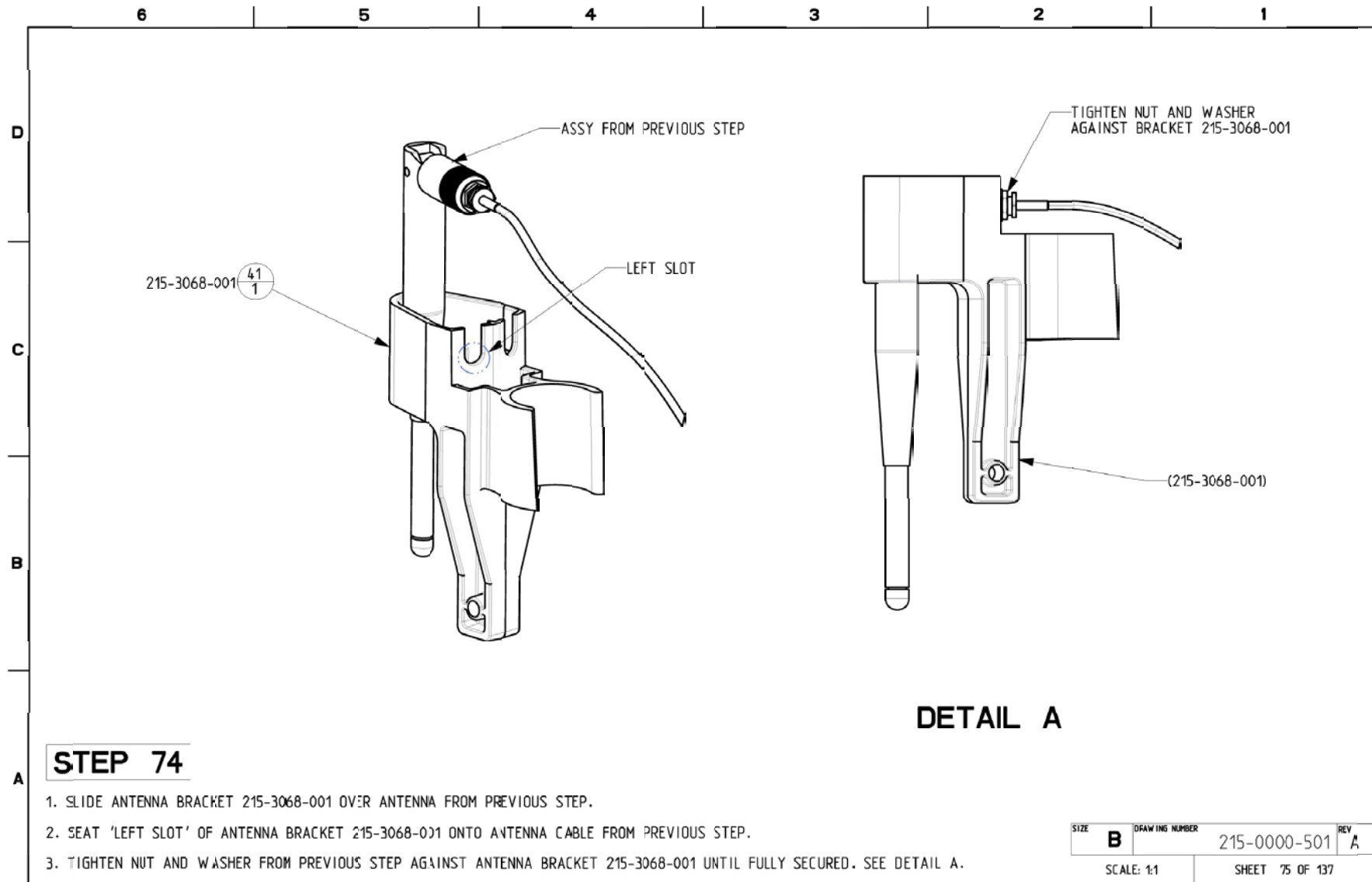
027-009 ¹⁴⁹₁

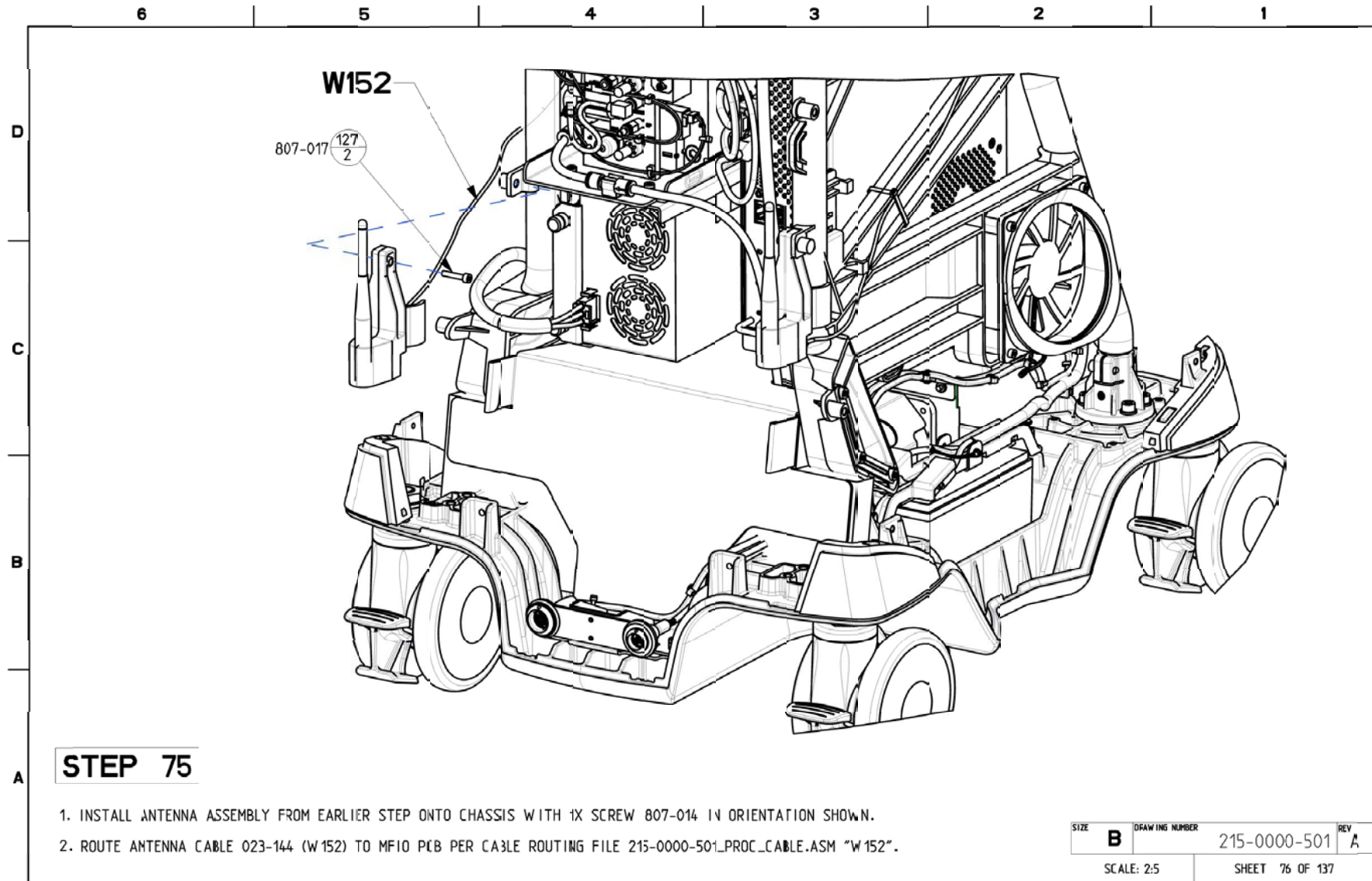


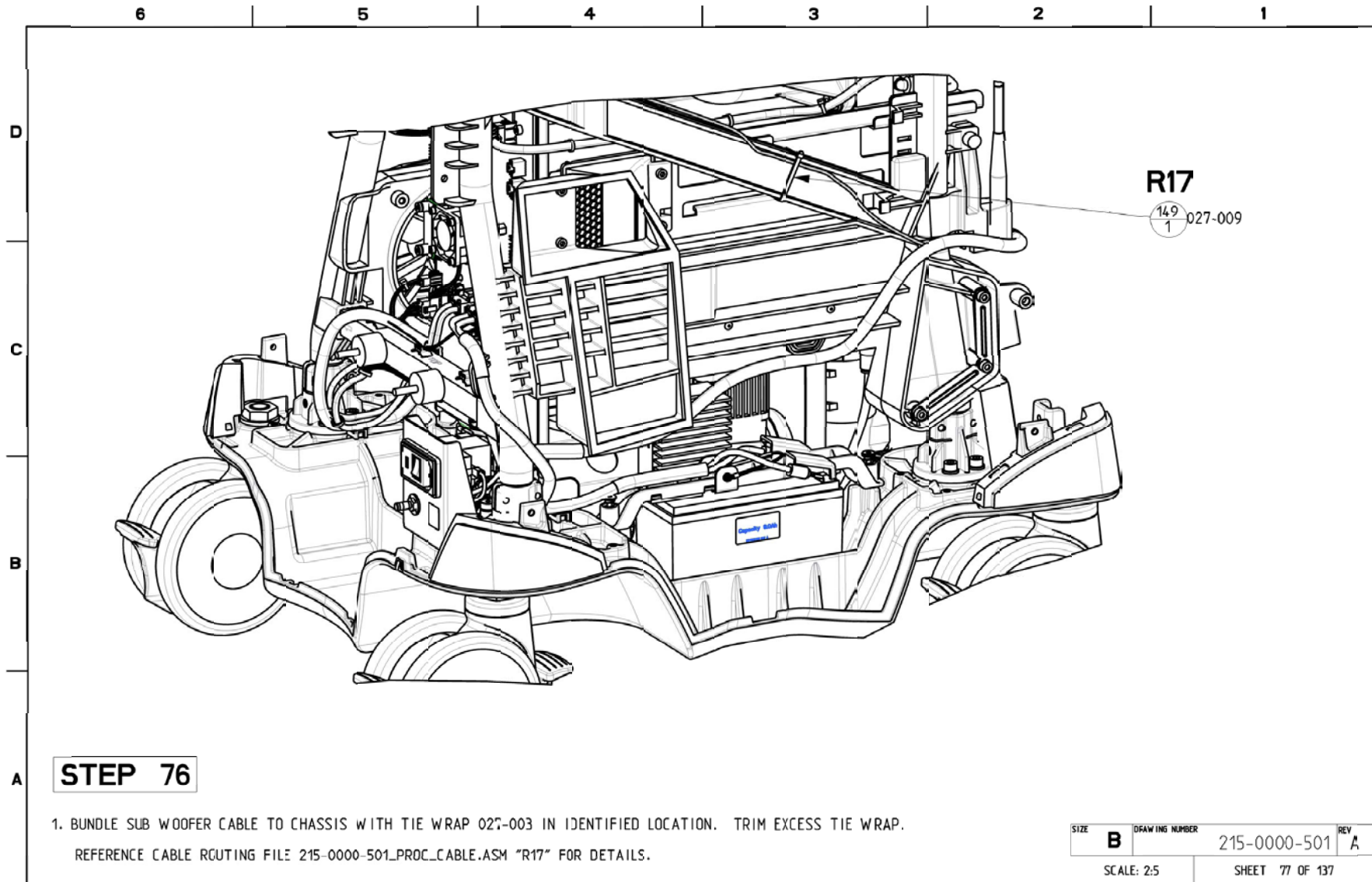
STEP 73

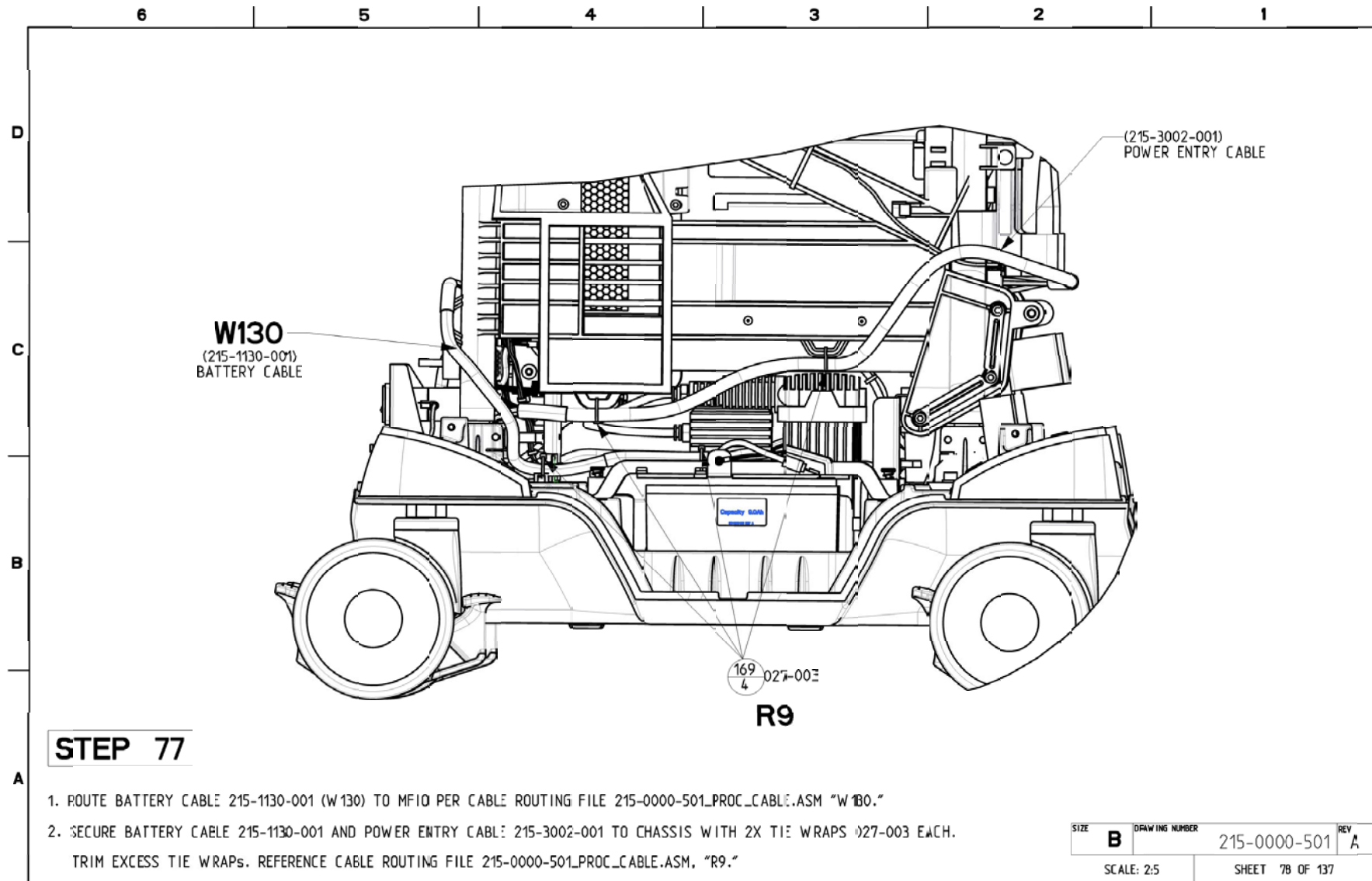
1. BUNDLE ANTENNA CABLE TO CHASSIS WITH TIE WRAP 027-009 IN IDENTIFIED LOCATION. TRIM EXCESS TIE WRAP.
REFERENCE CABLE ROUTING FILE 215-0000-501_PROC_CABLE.ASM, "R16" FOR DETAILS.

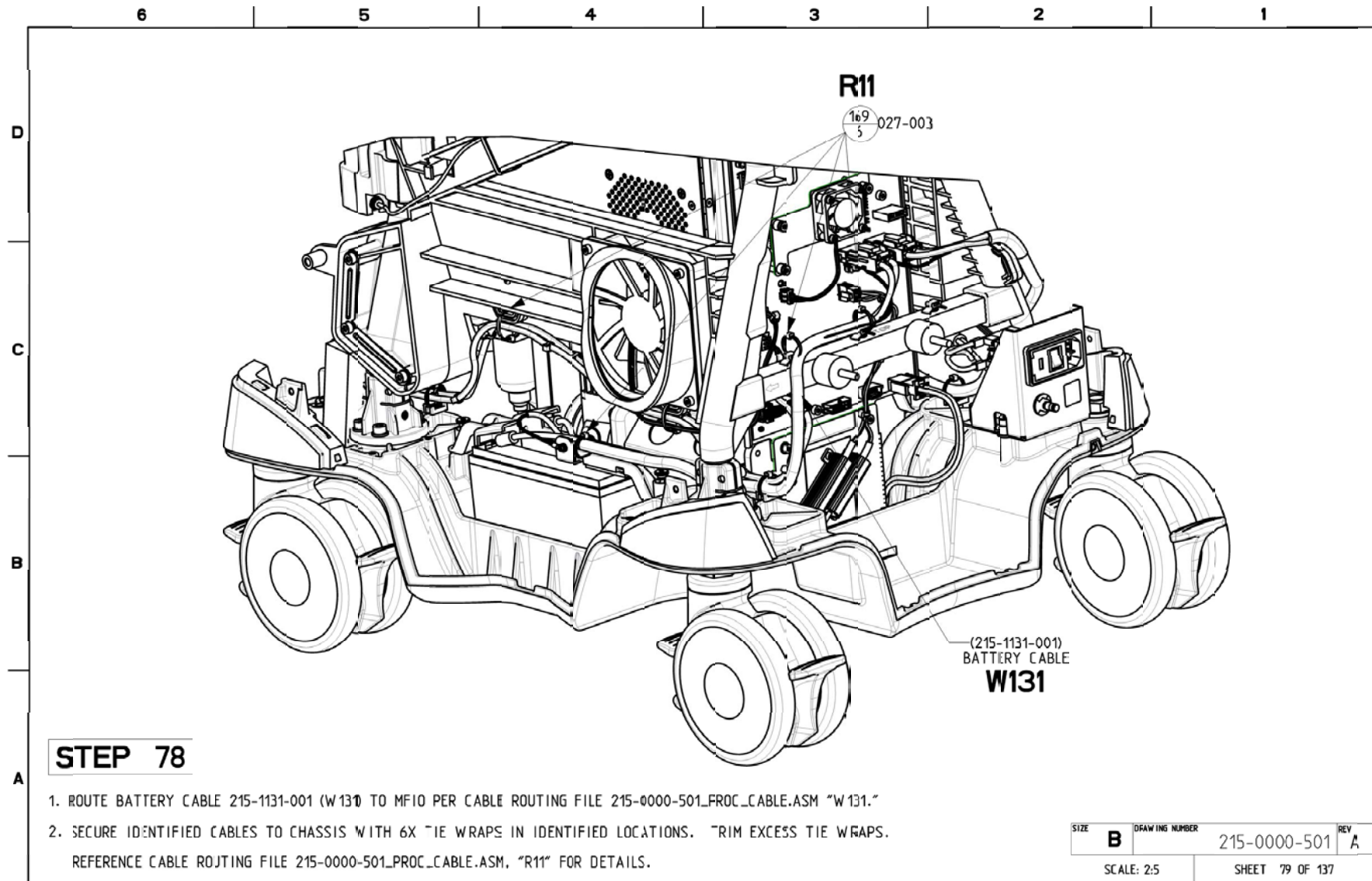
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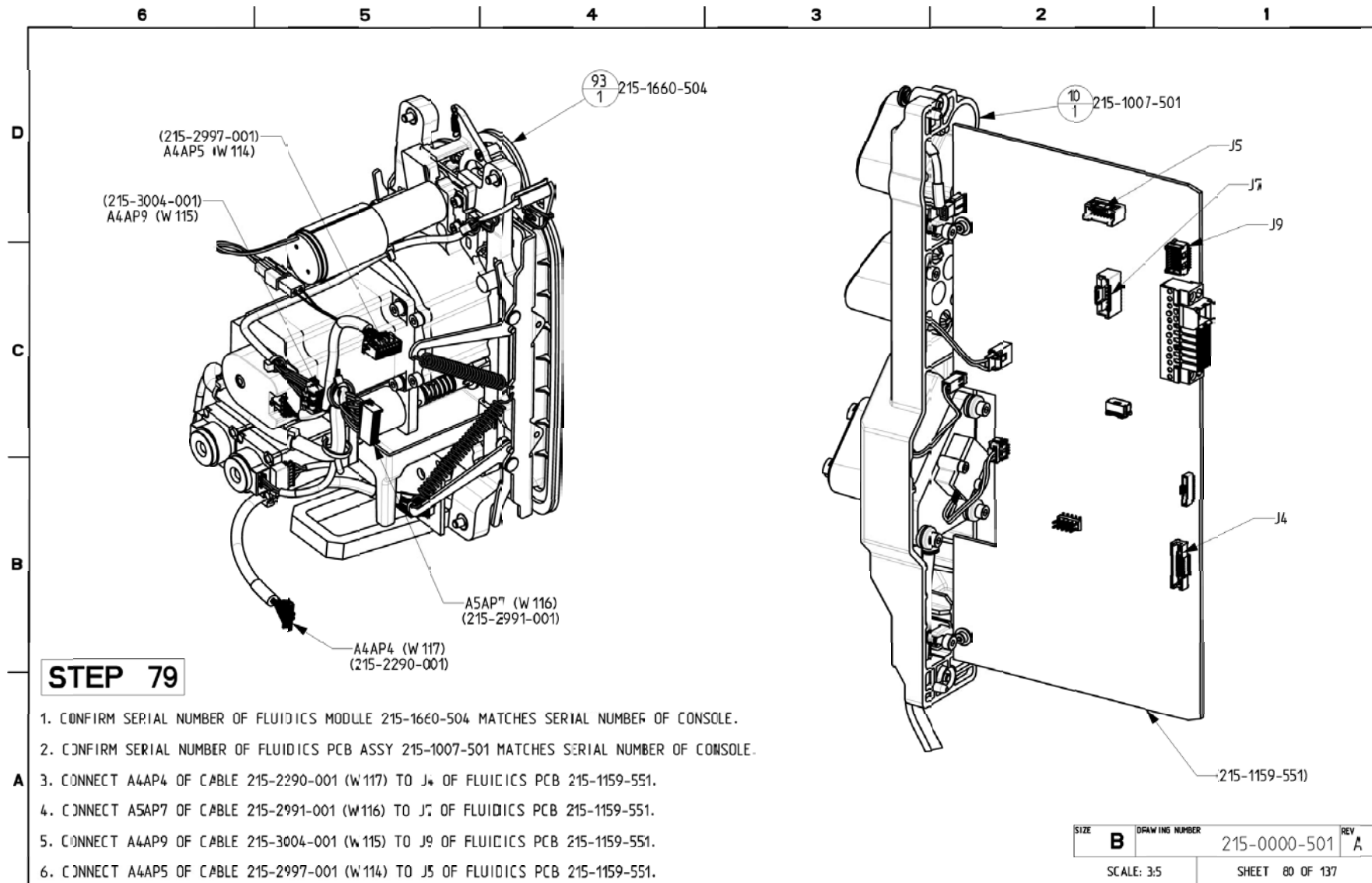


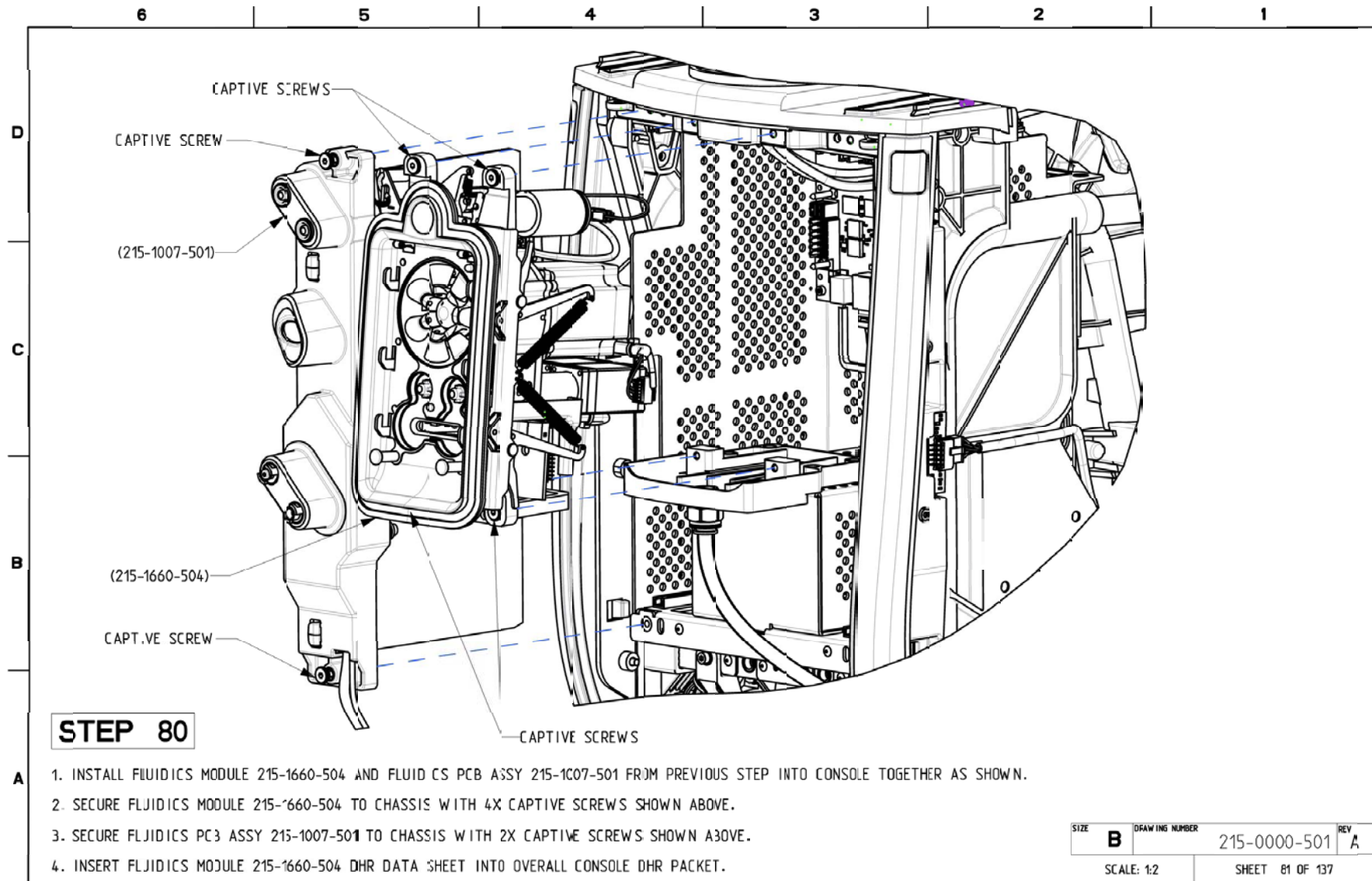


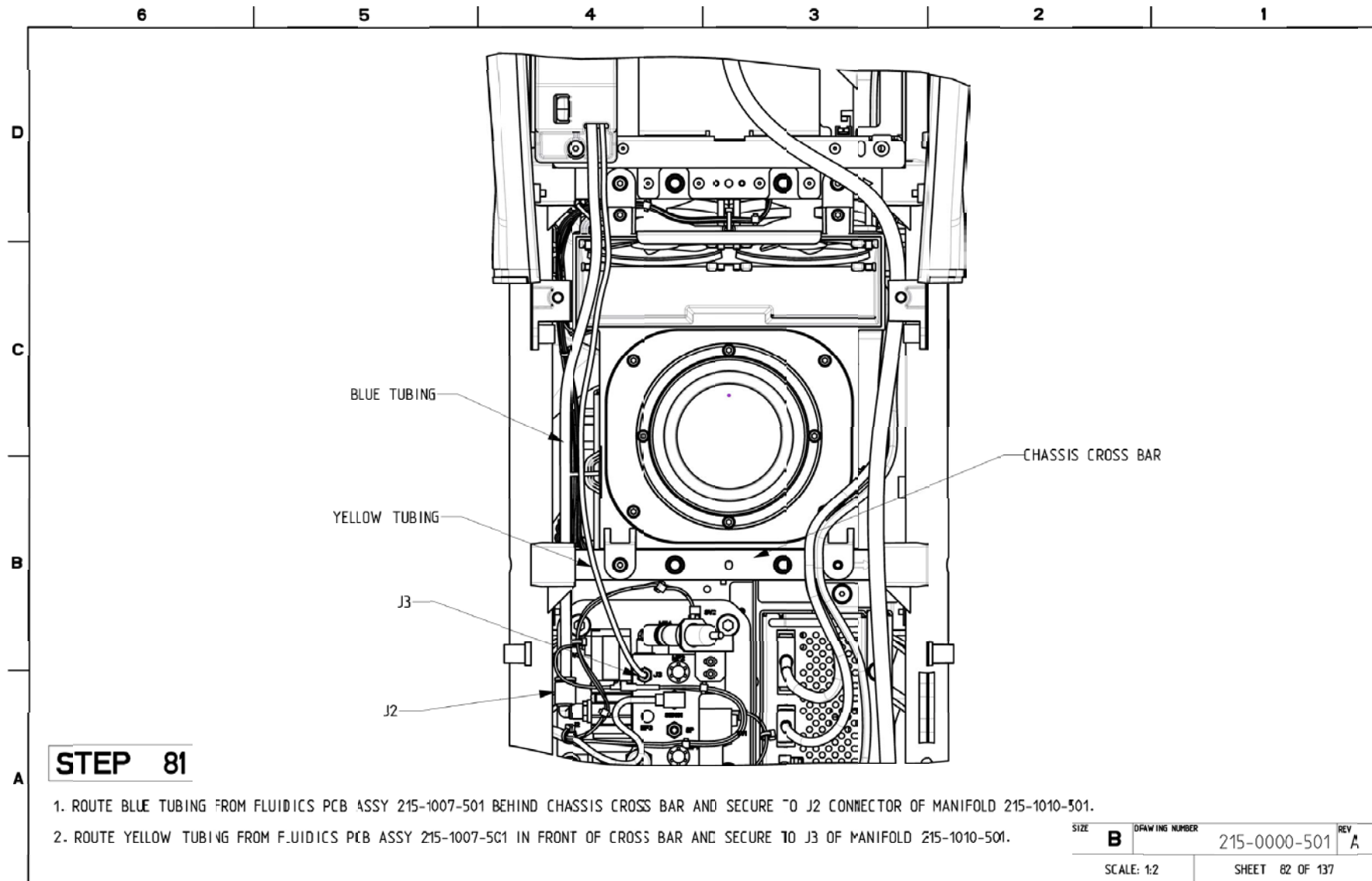


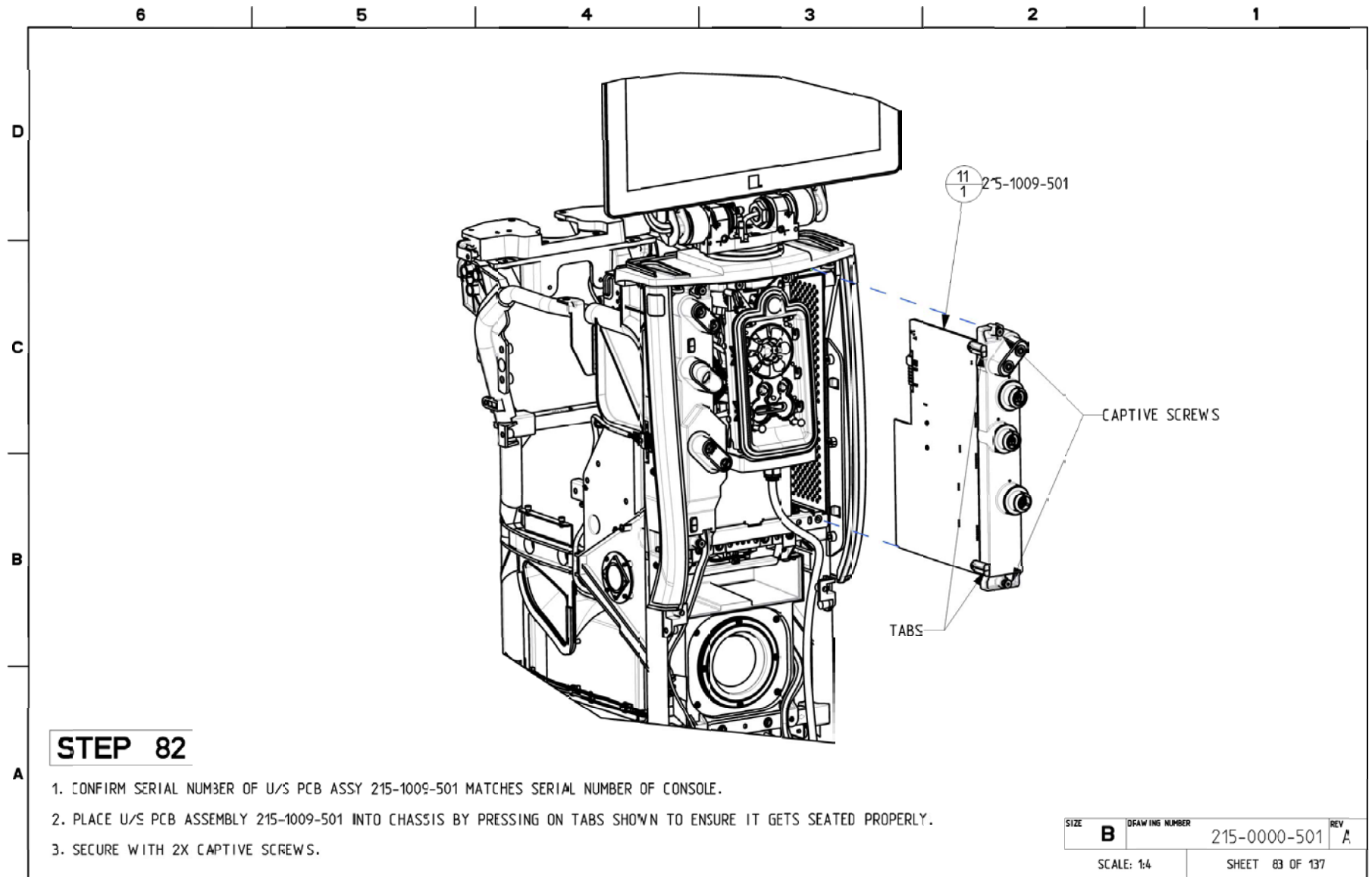


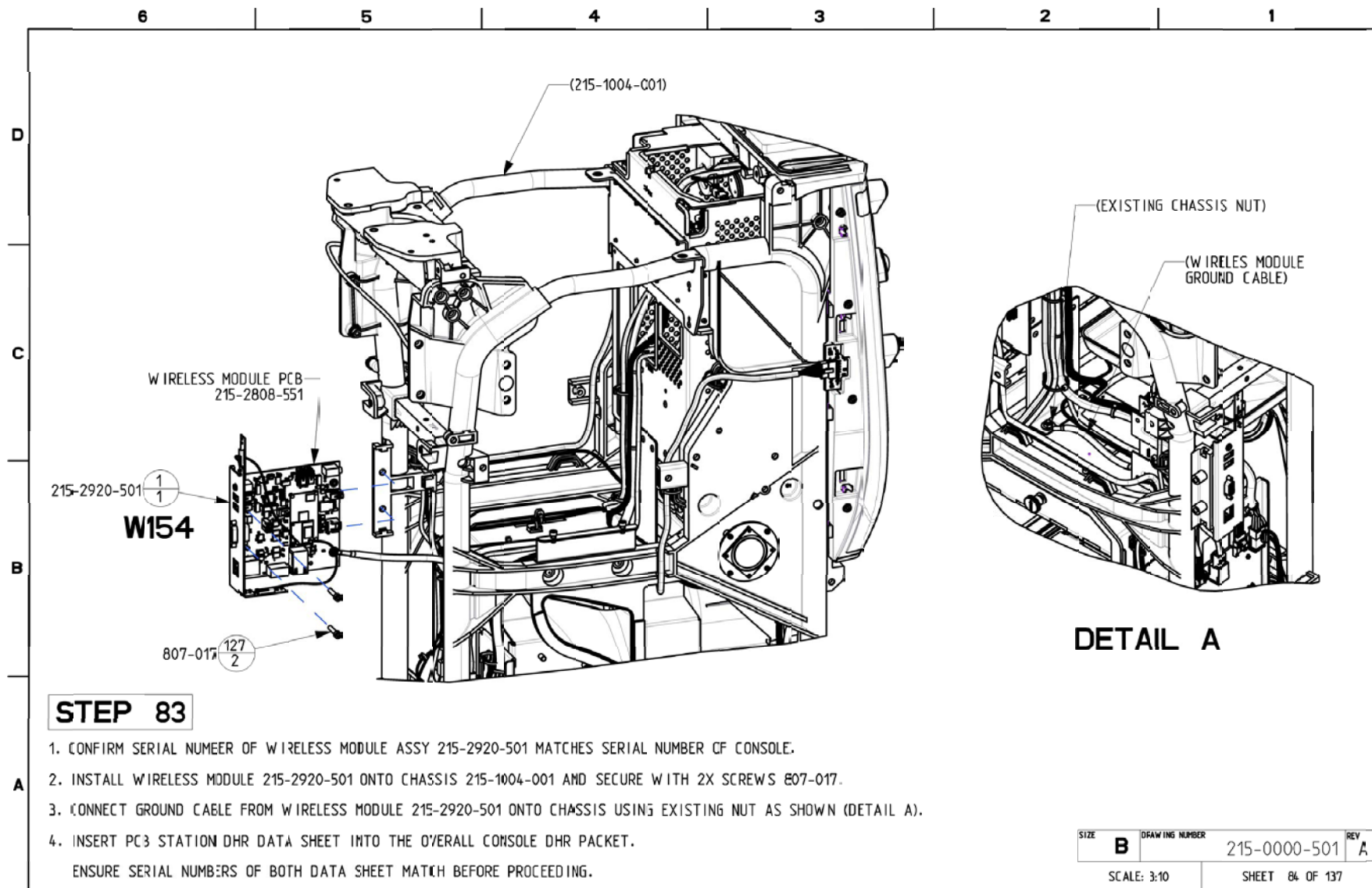


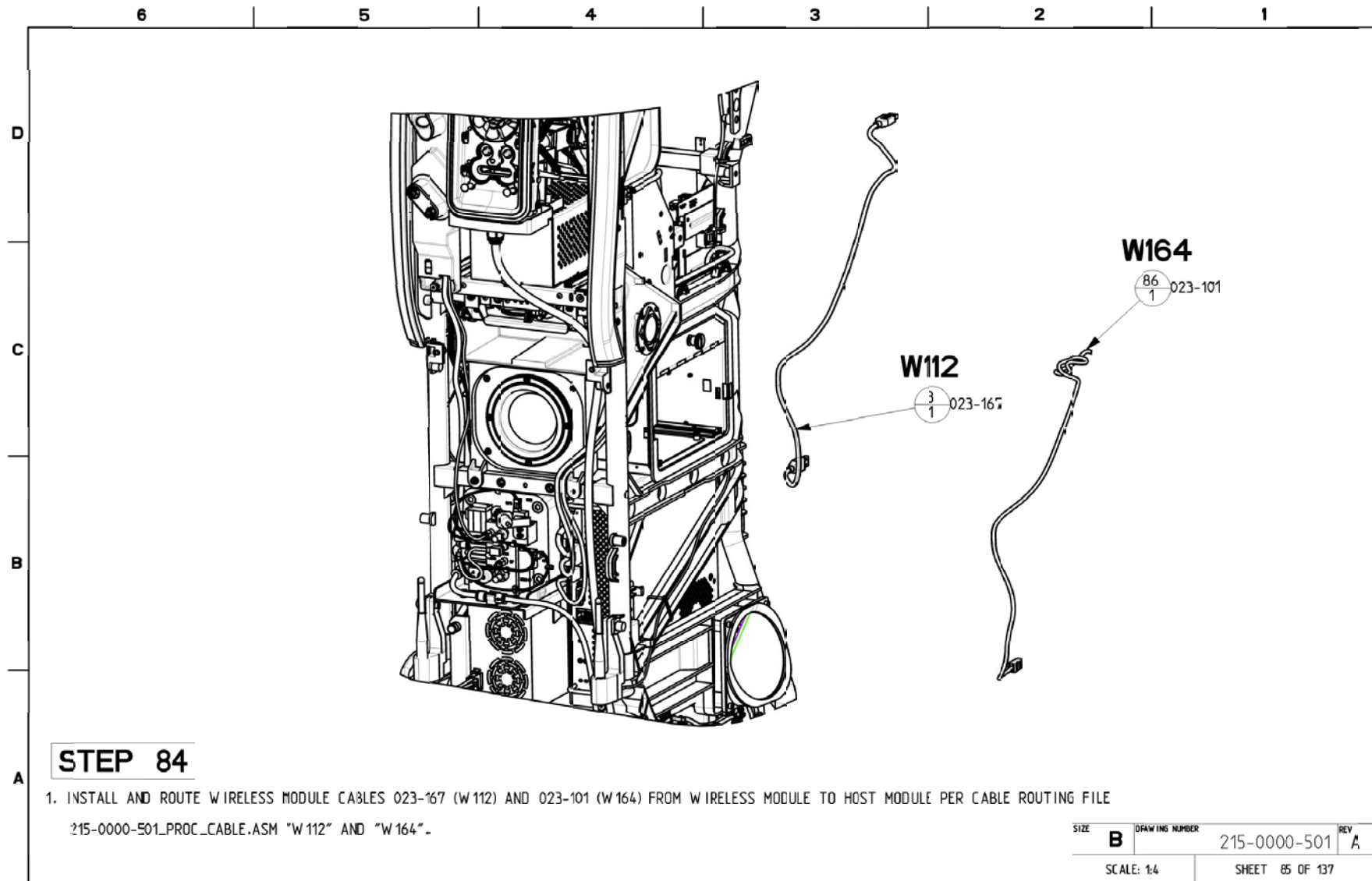


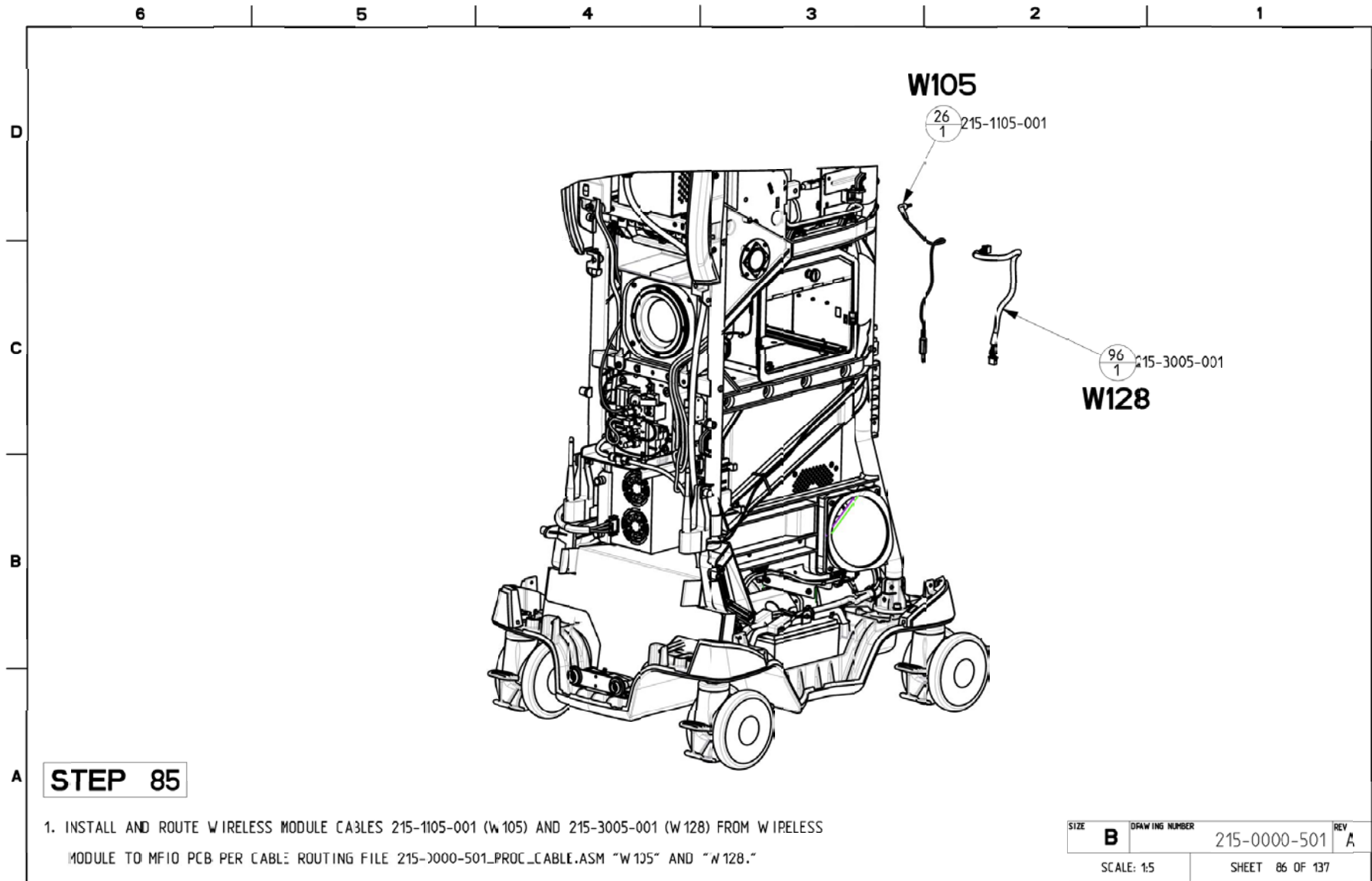


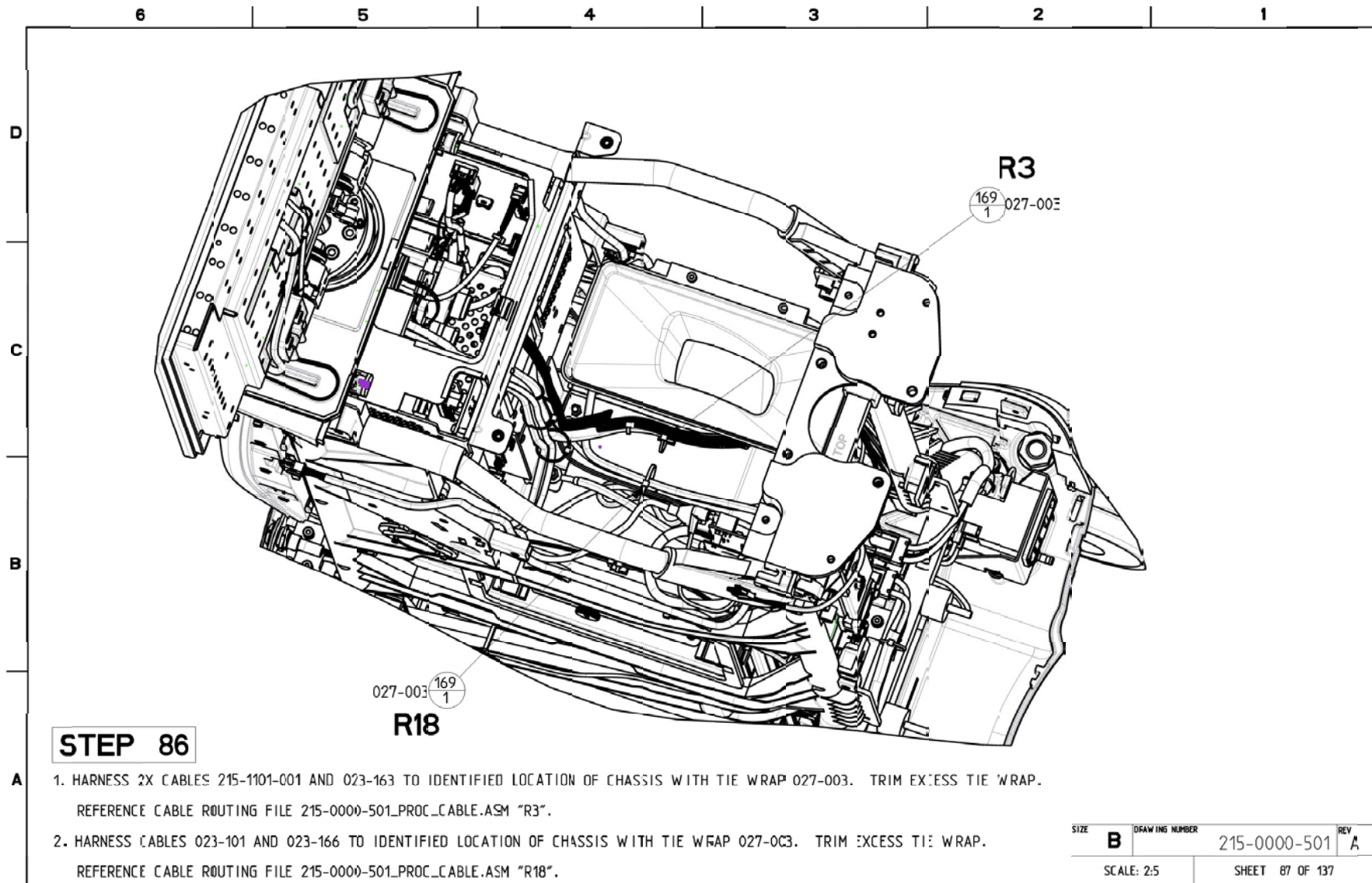


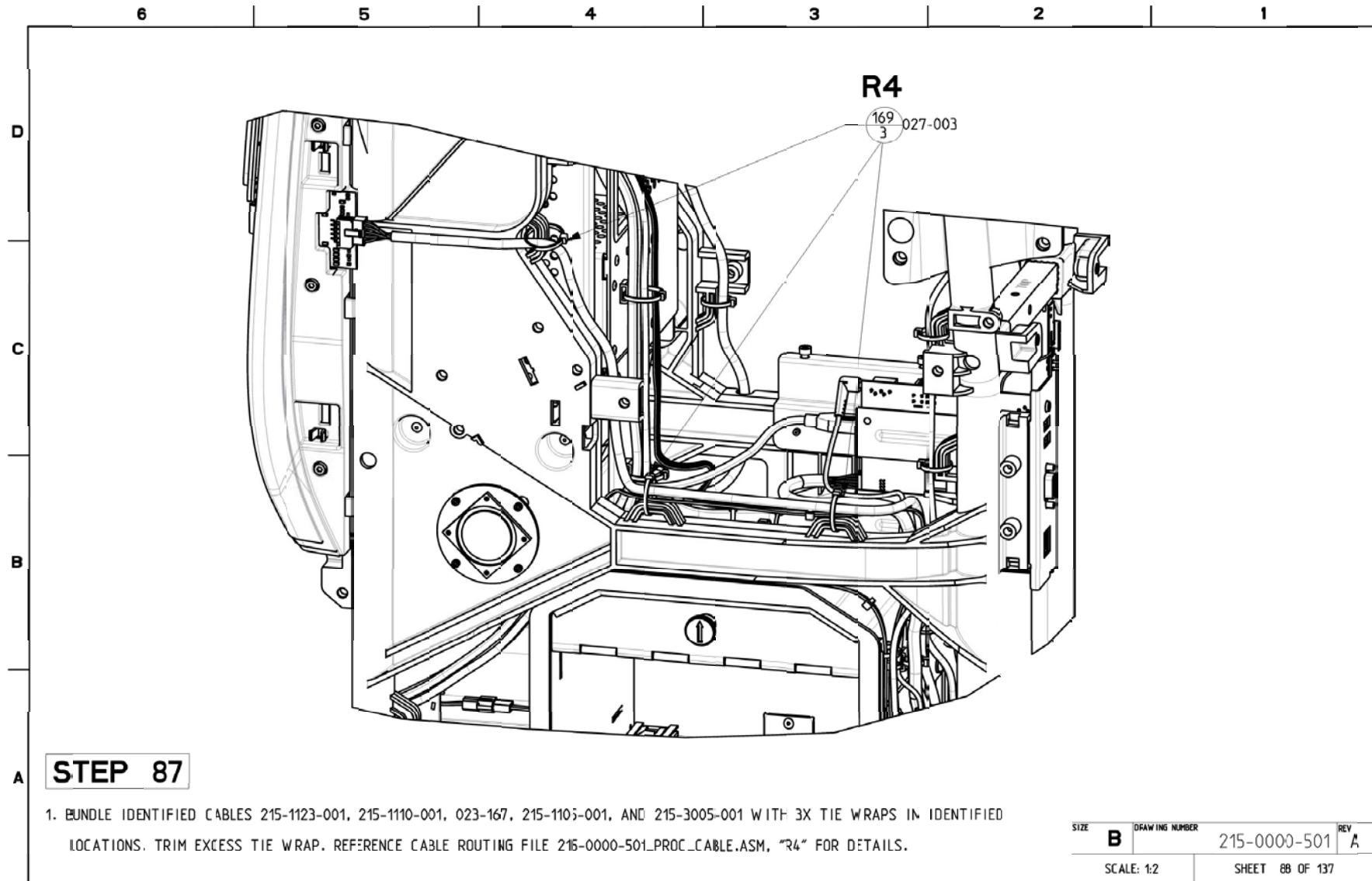


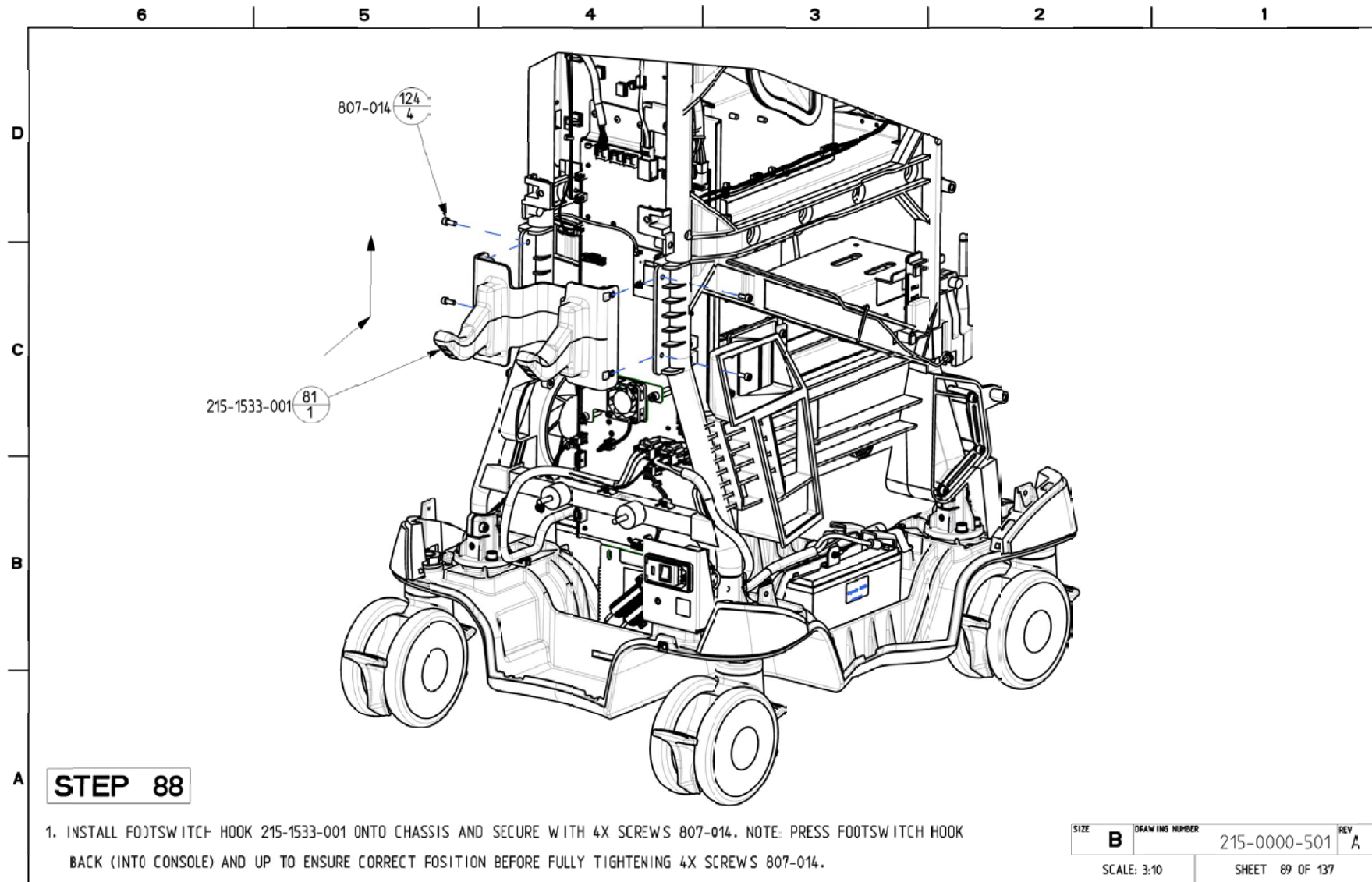


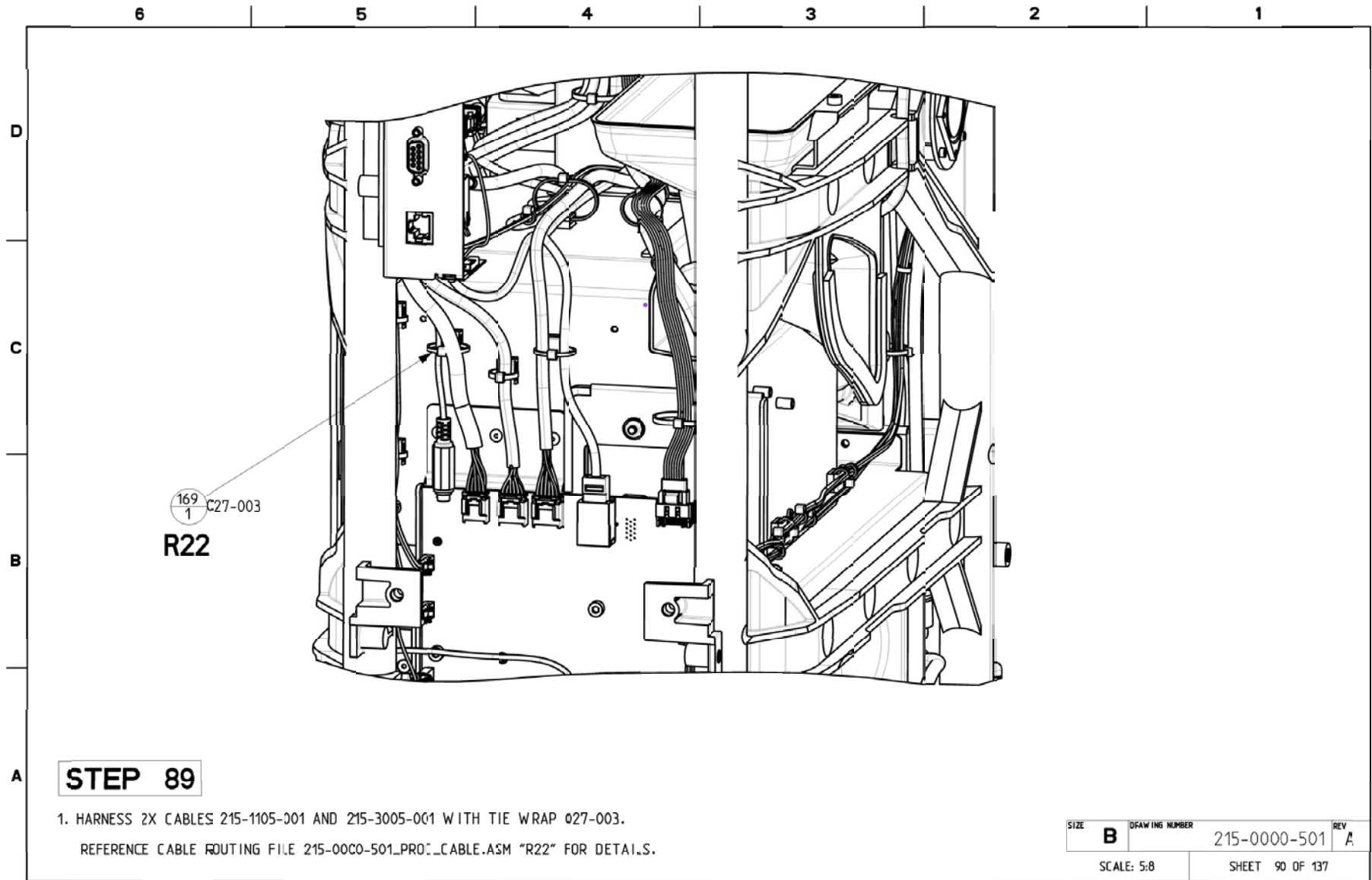


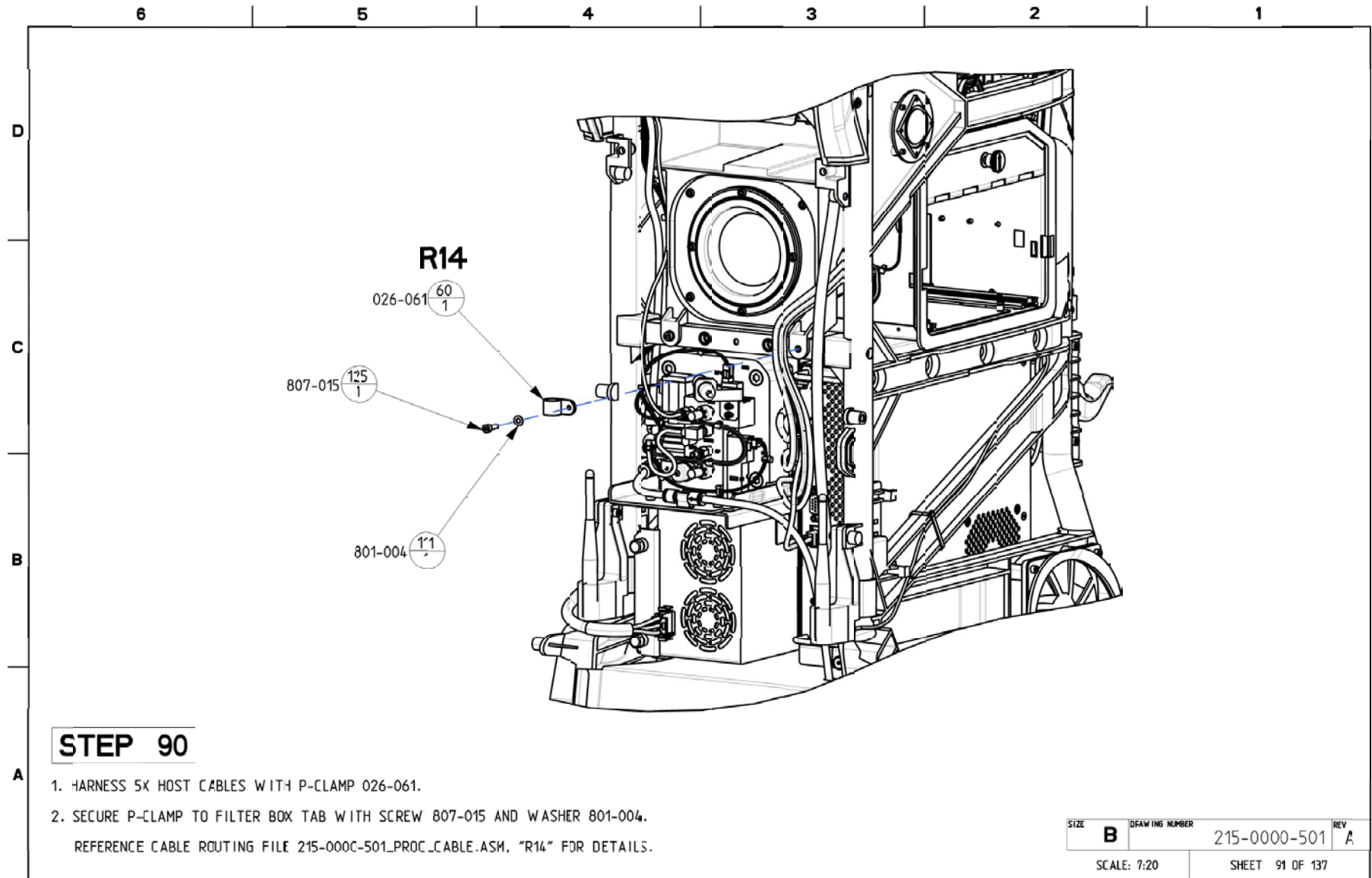


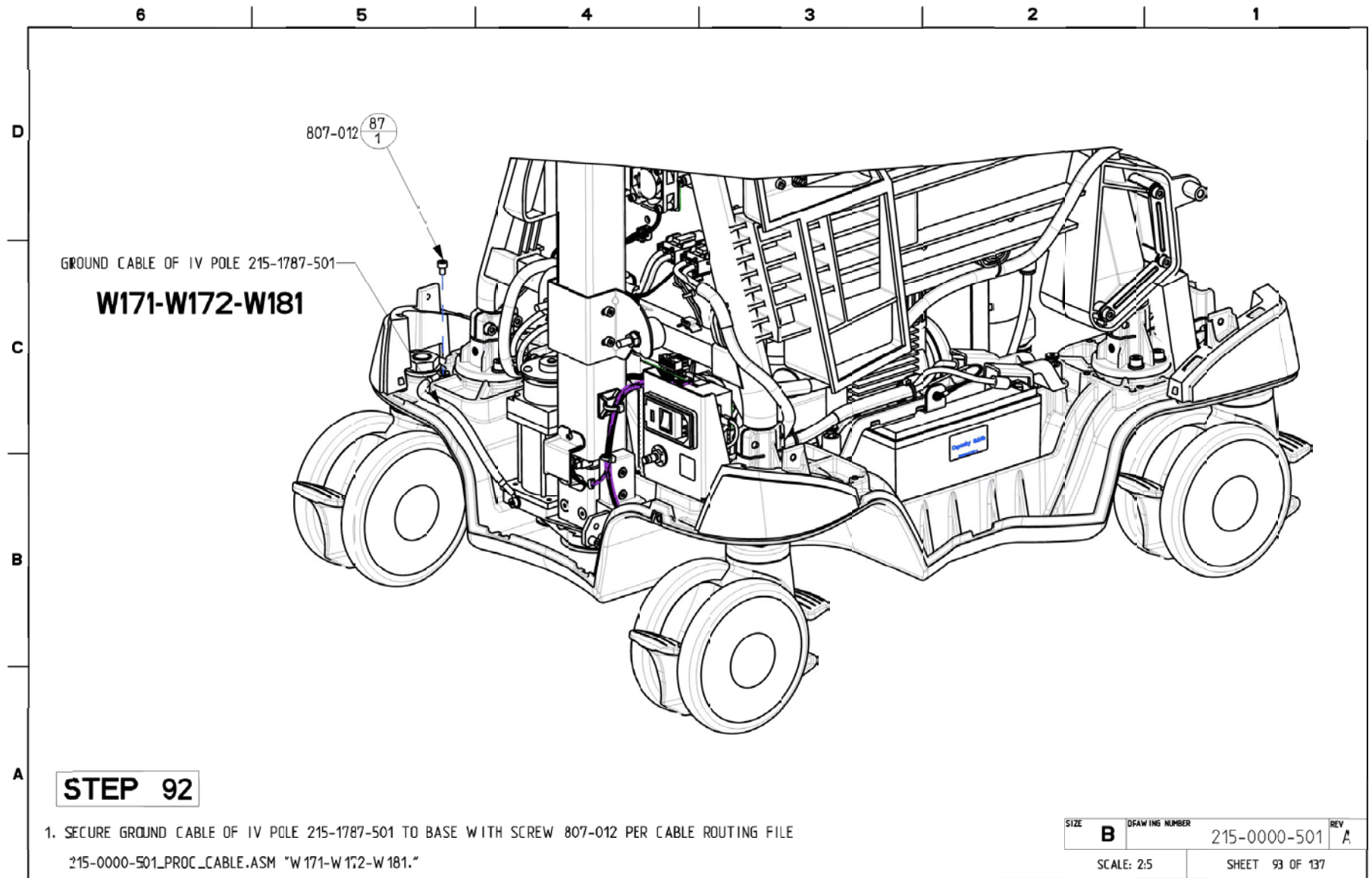


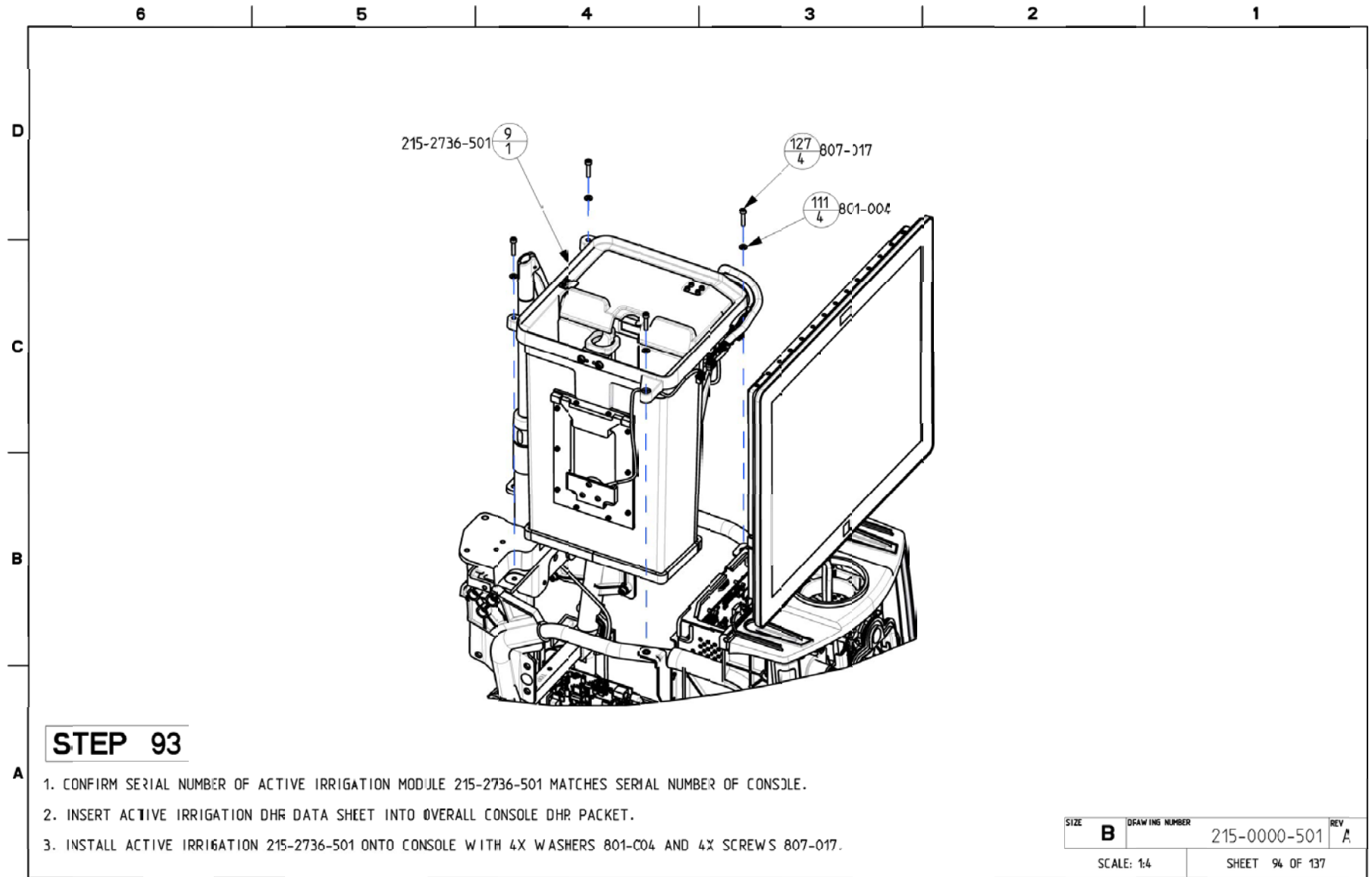


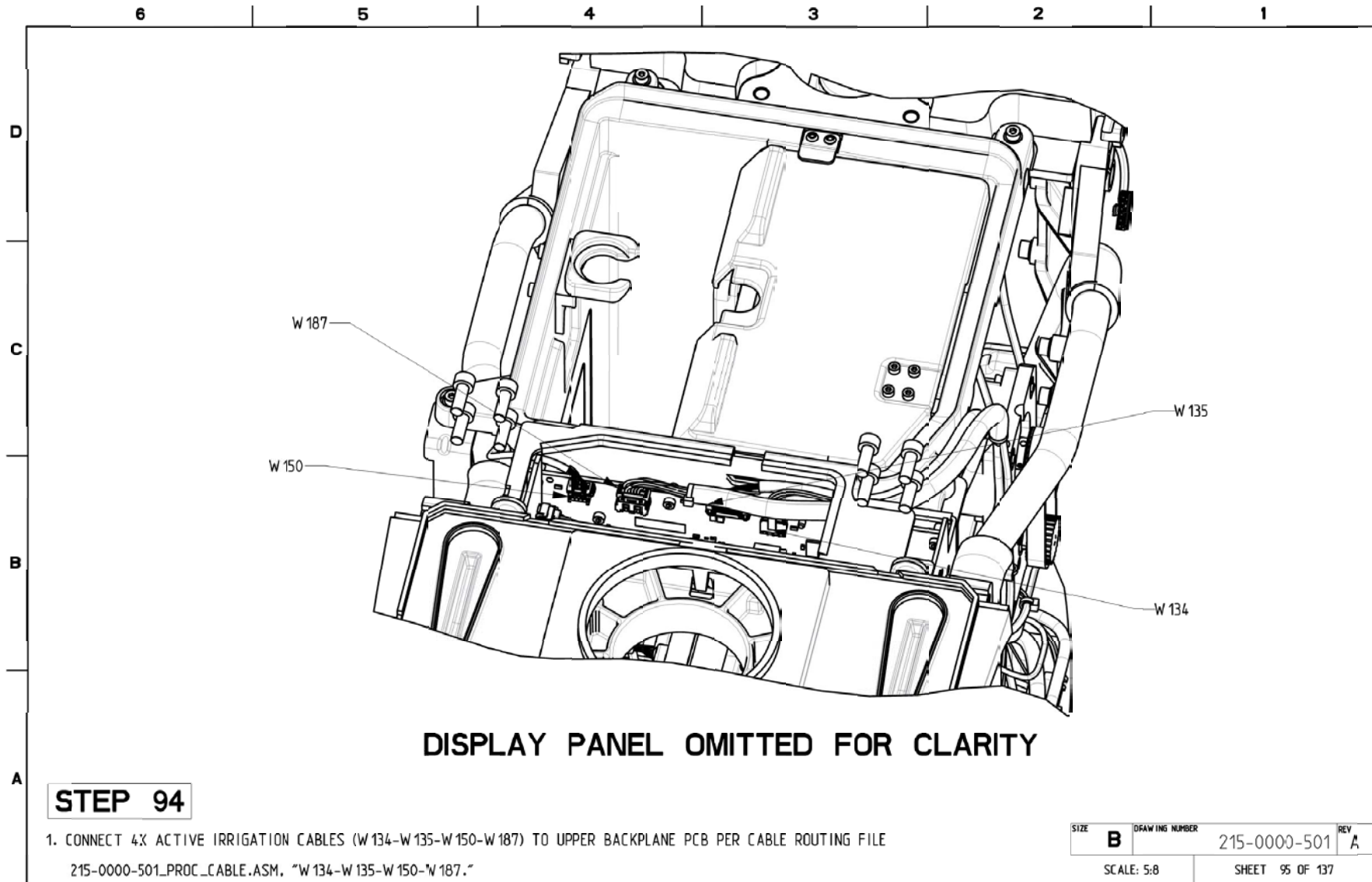


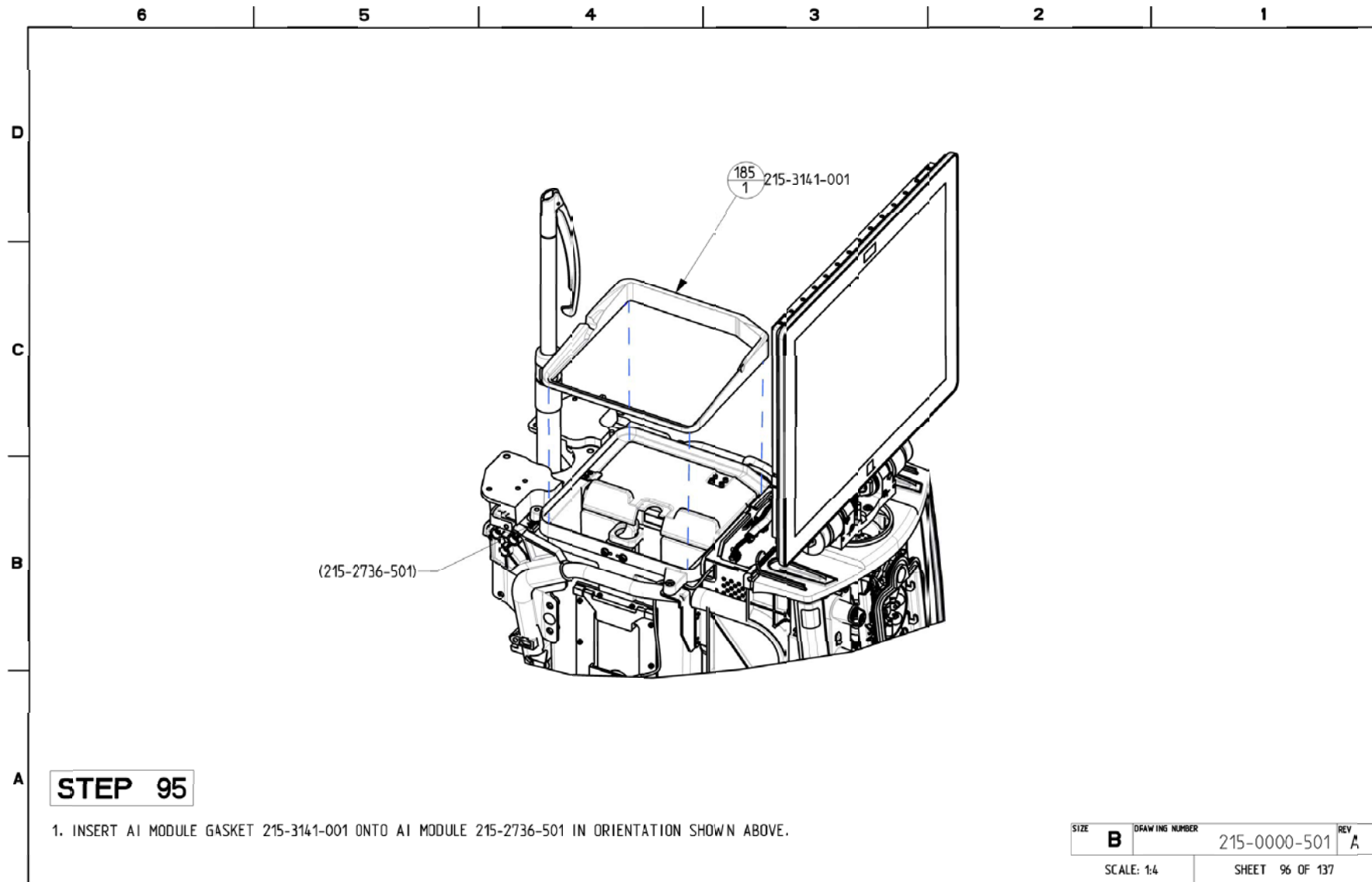


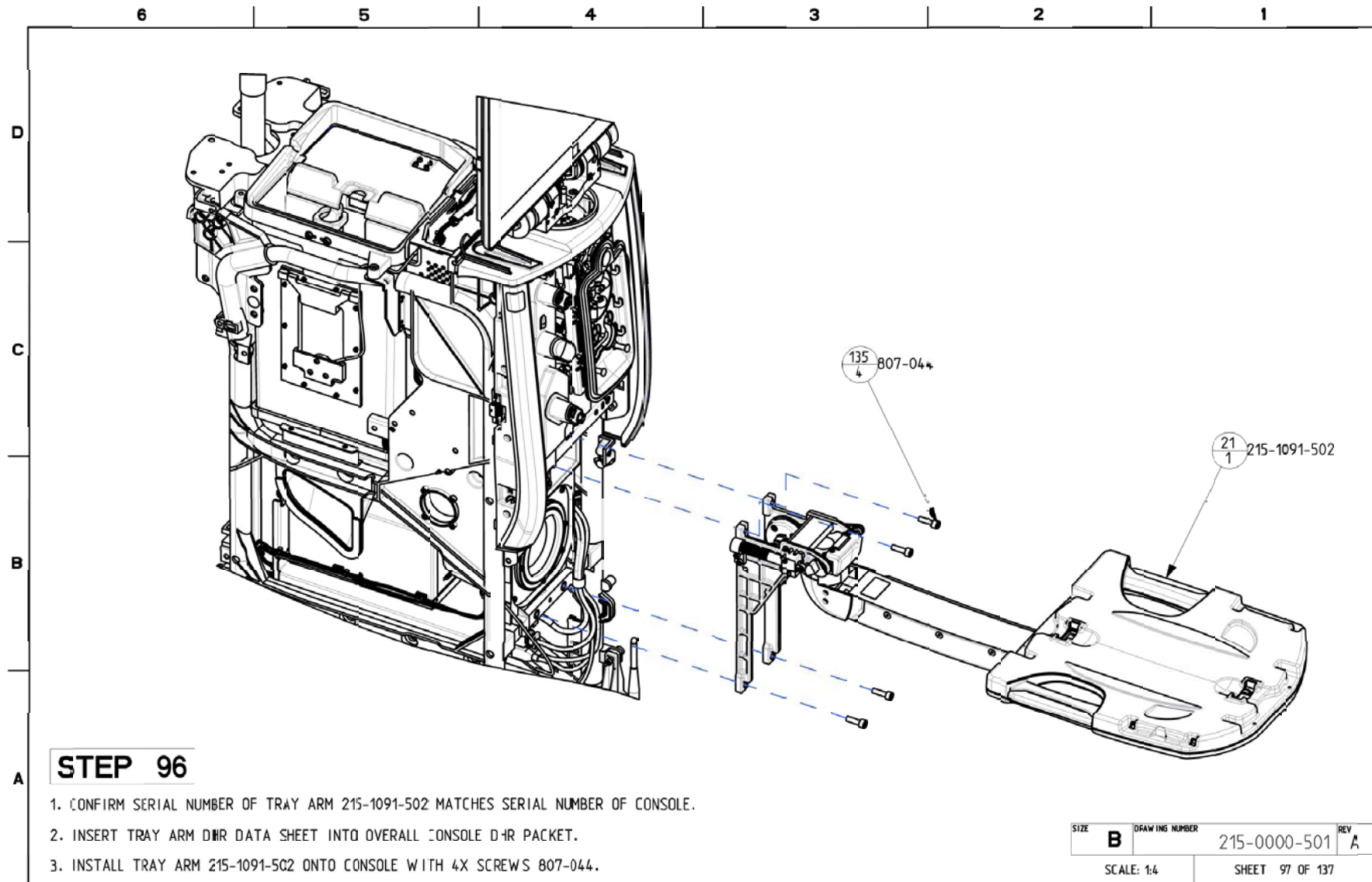


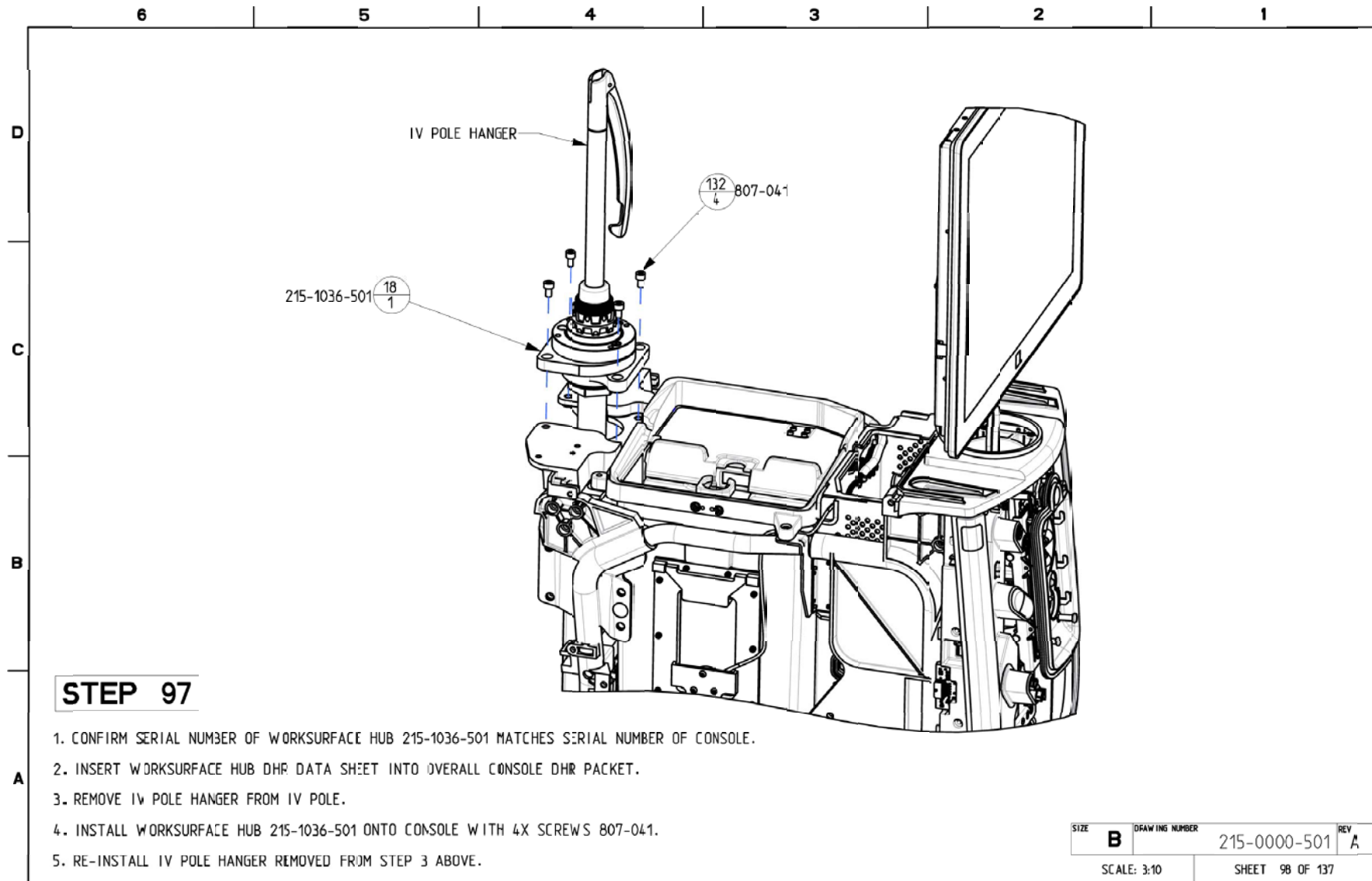


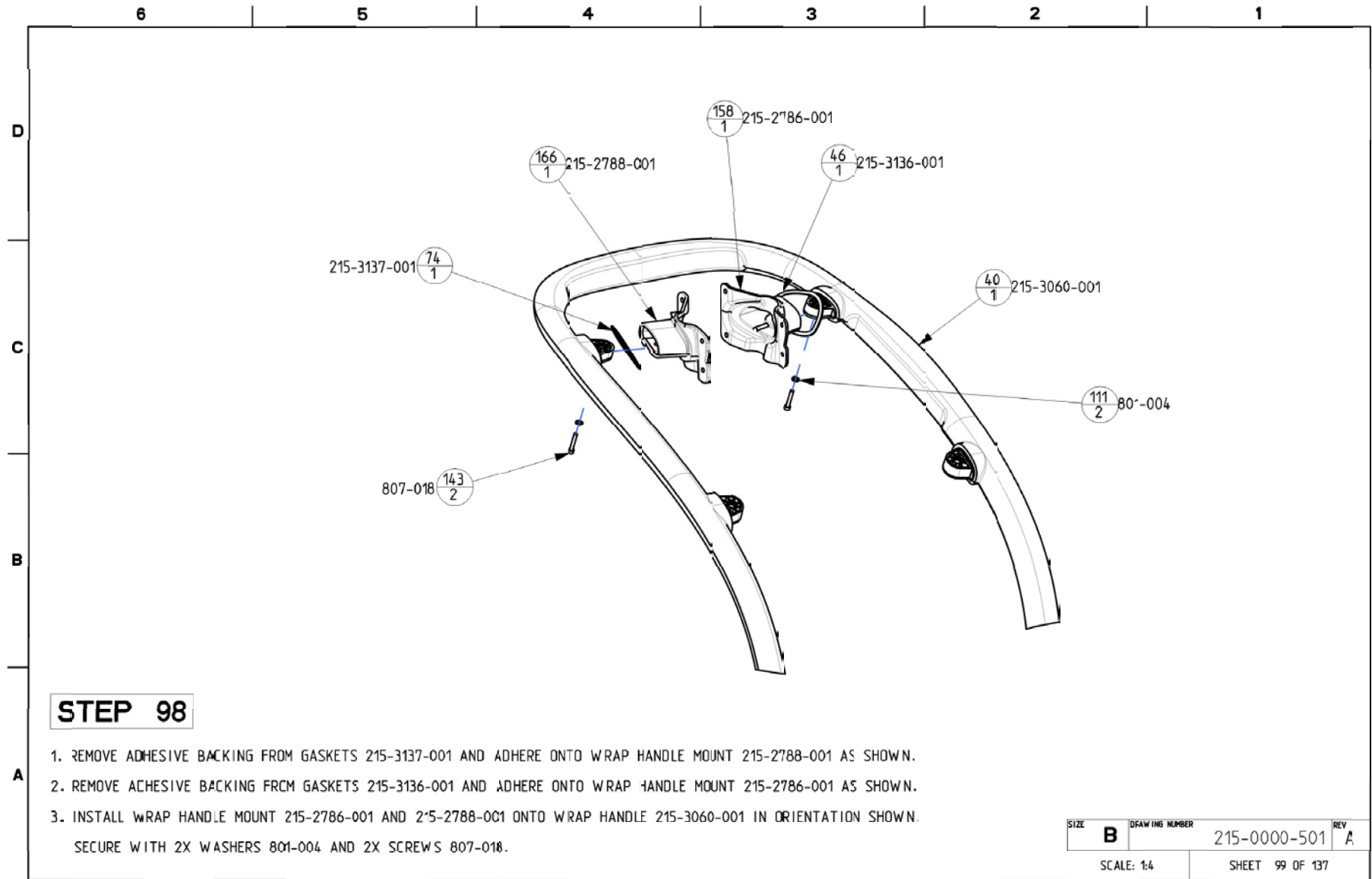


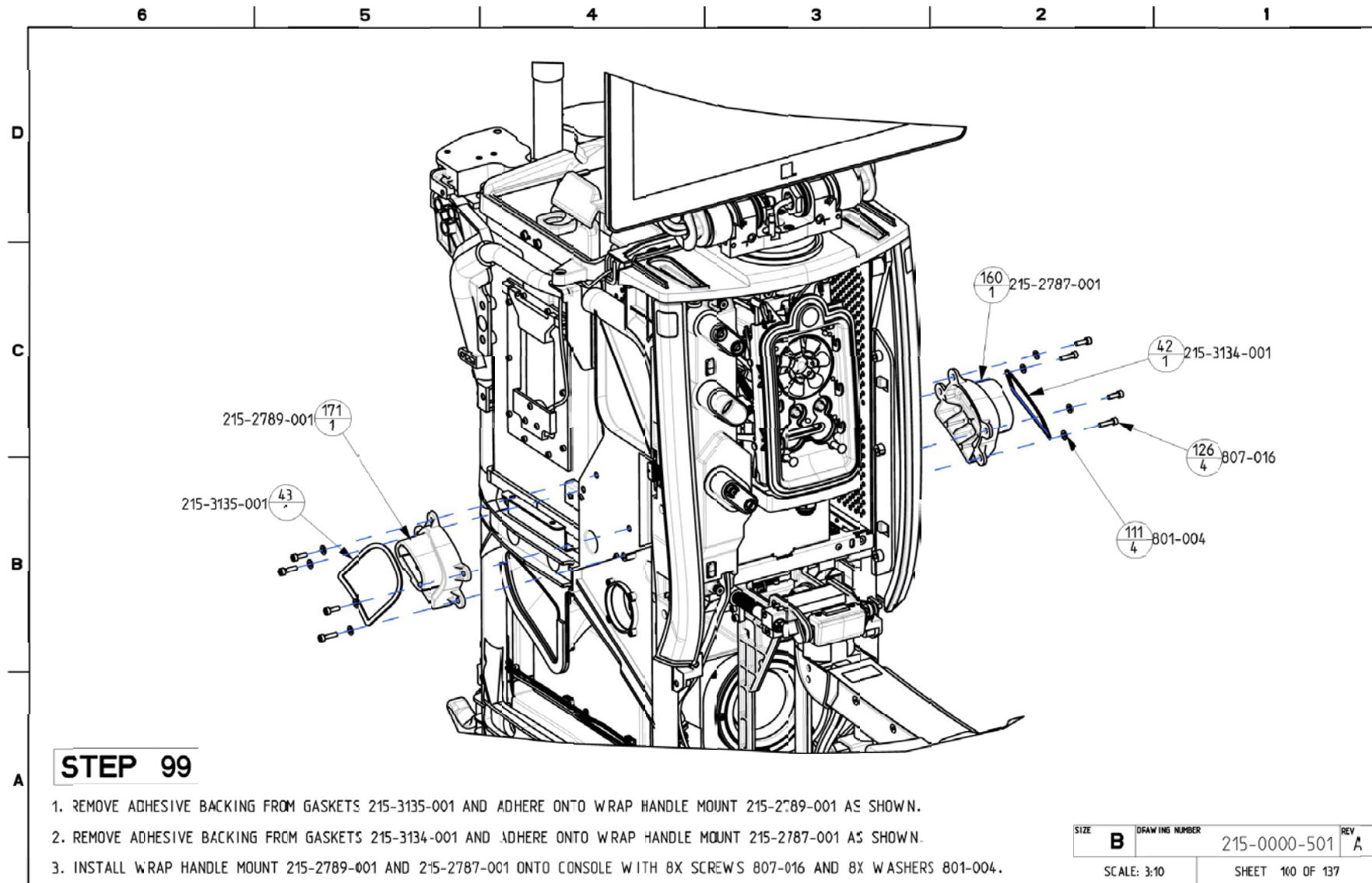


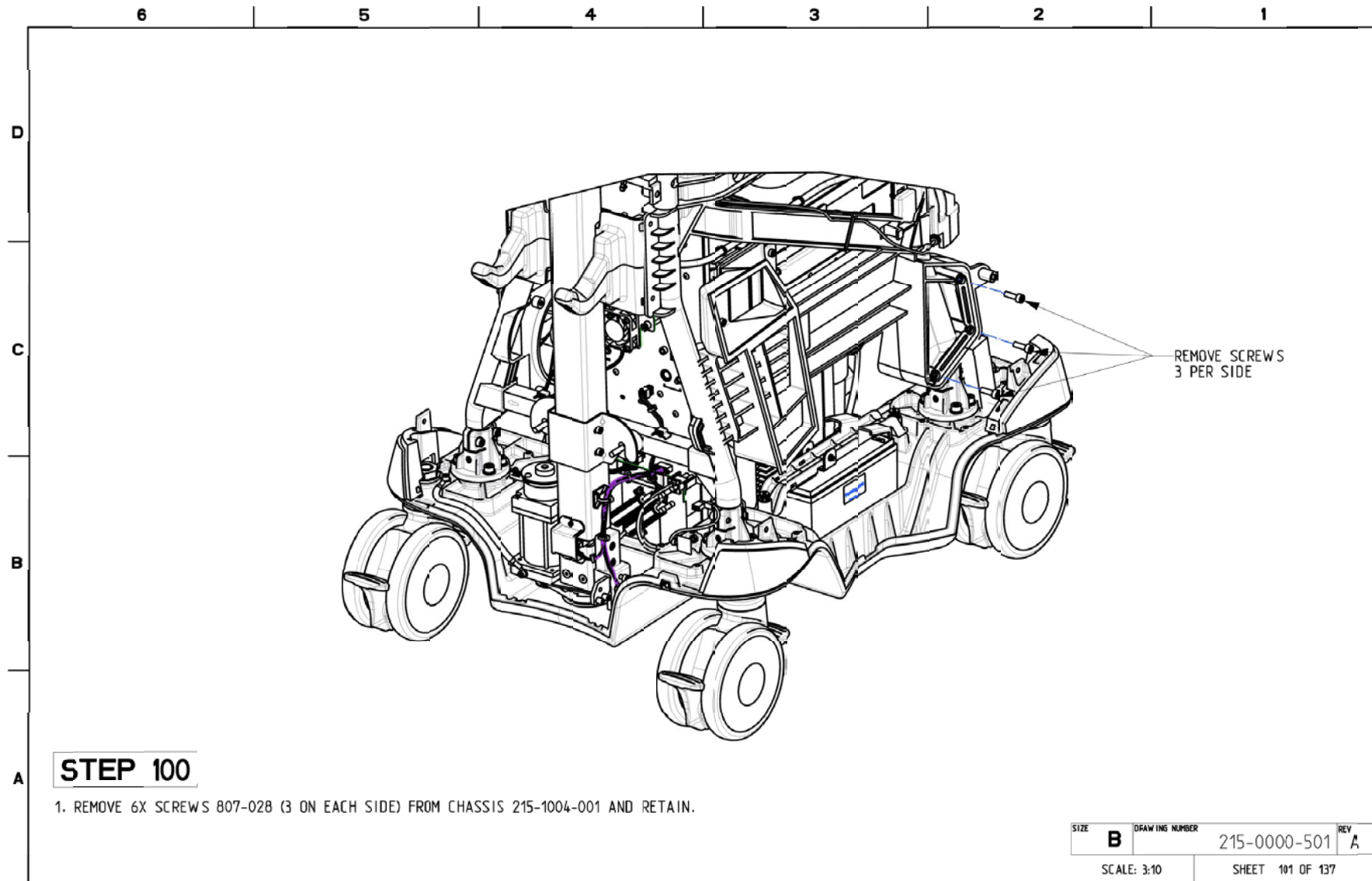


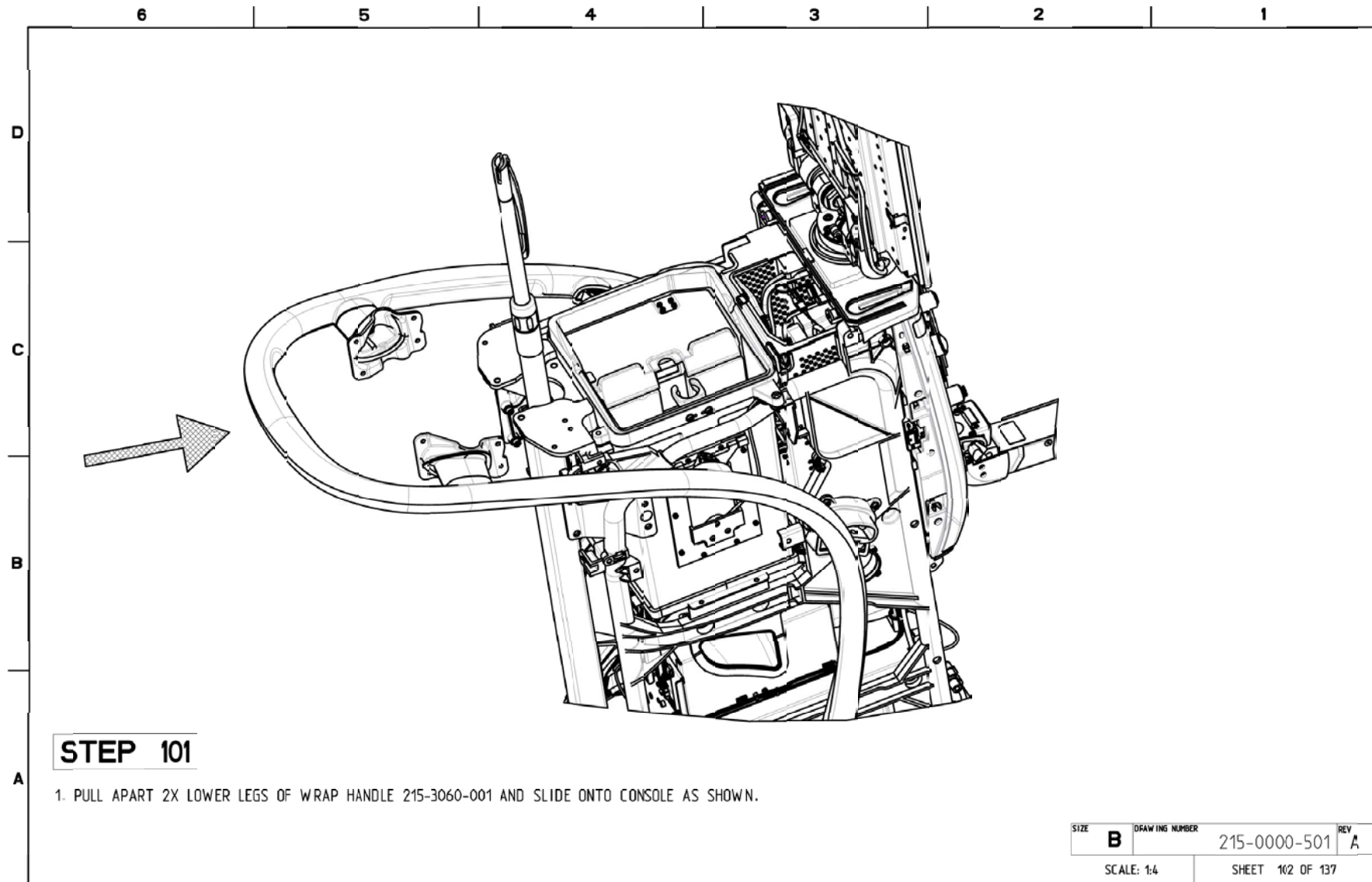


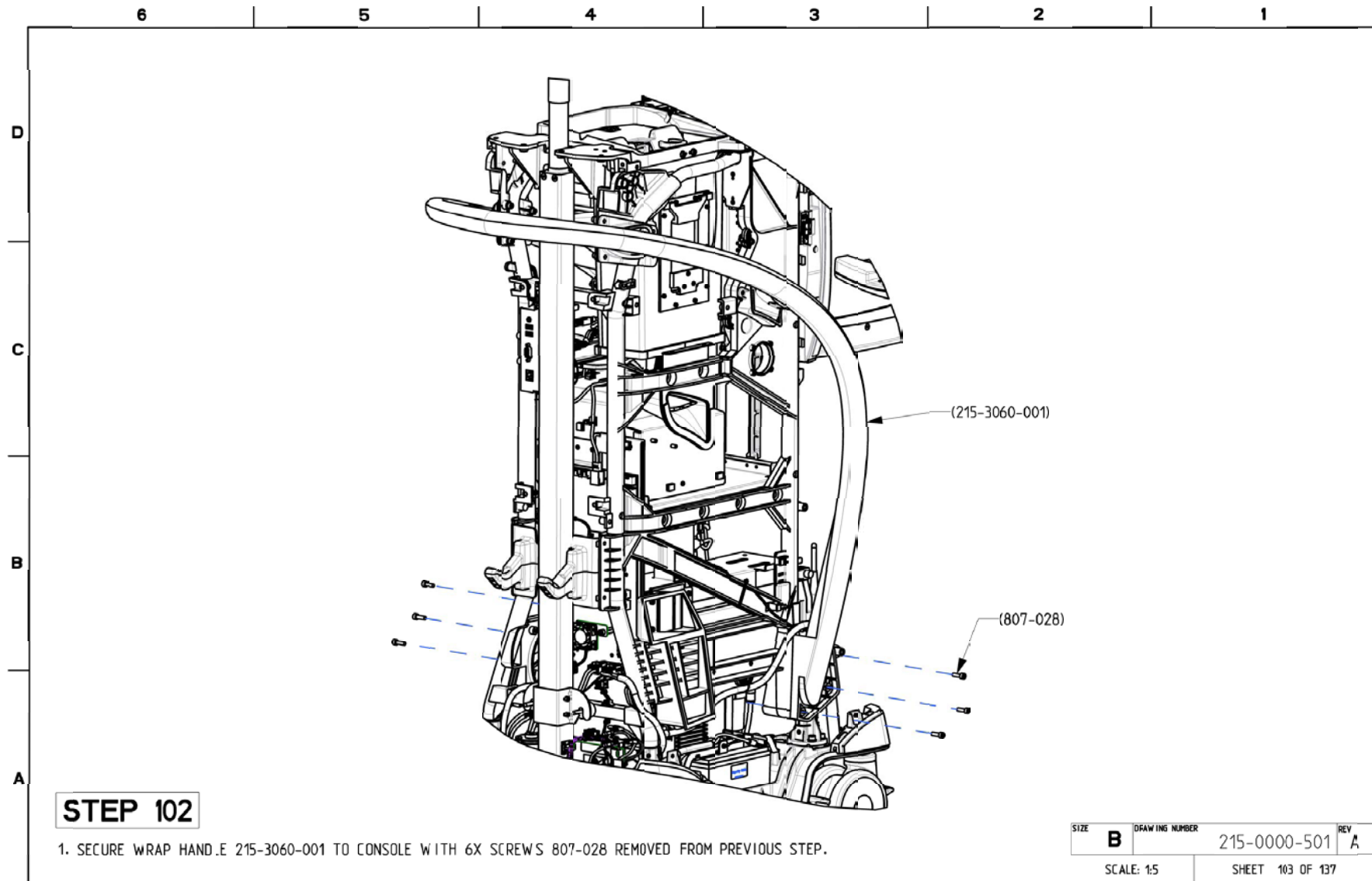


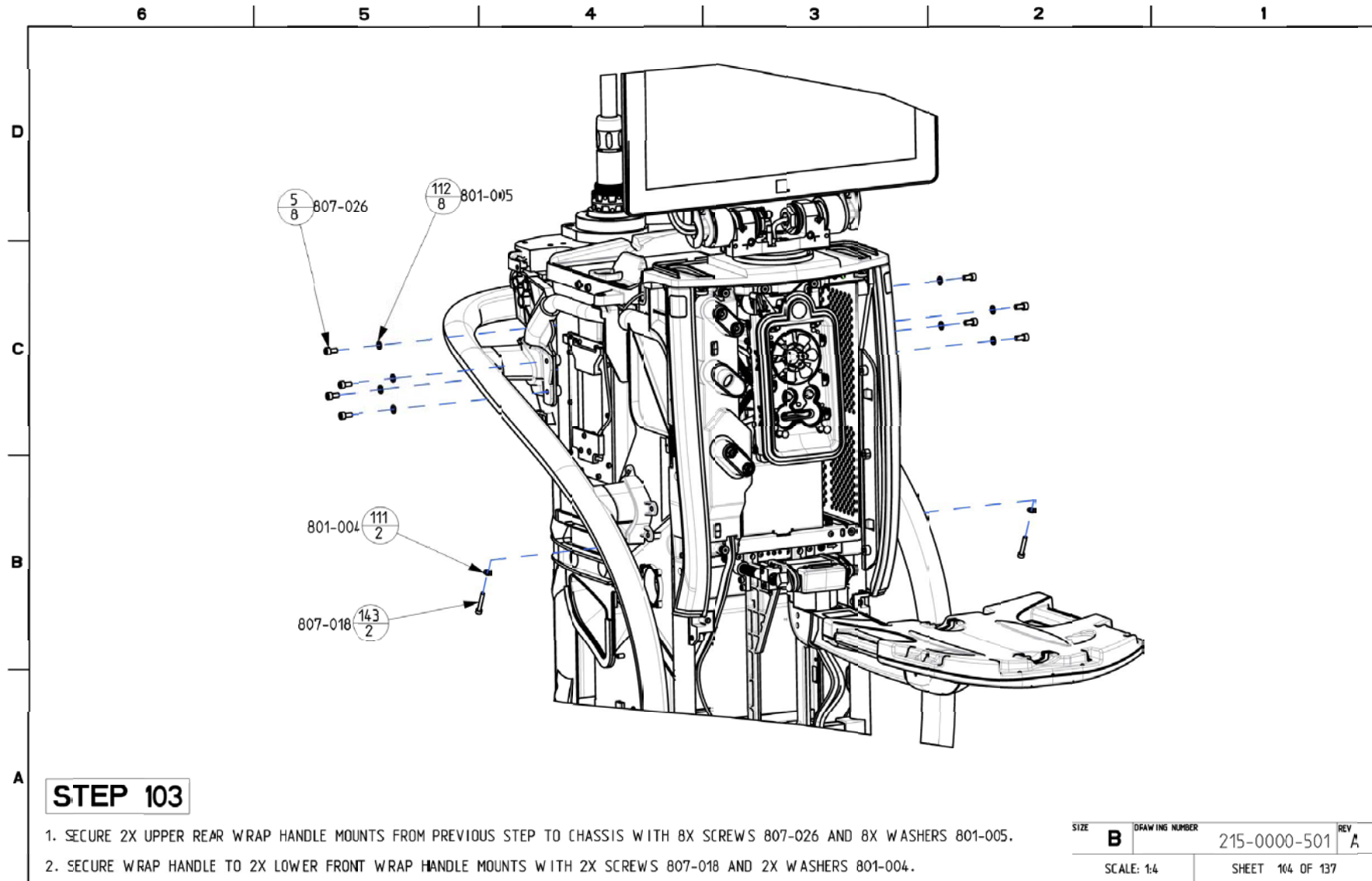


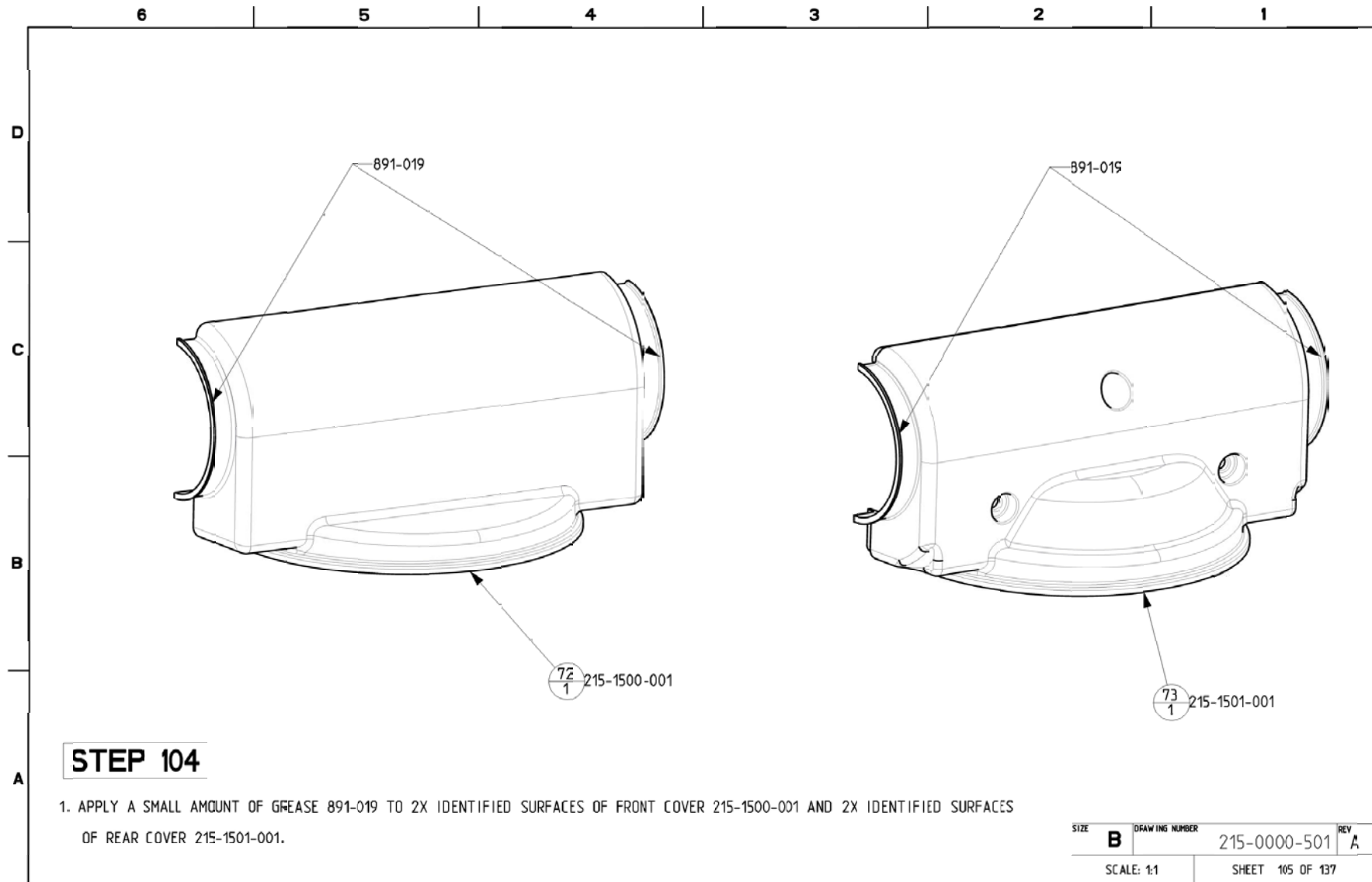


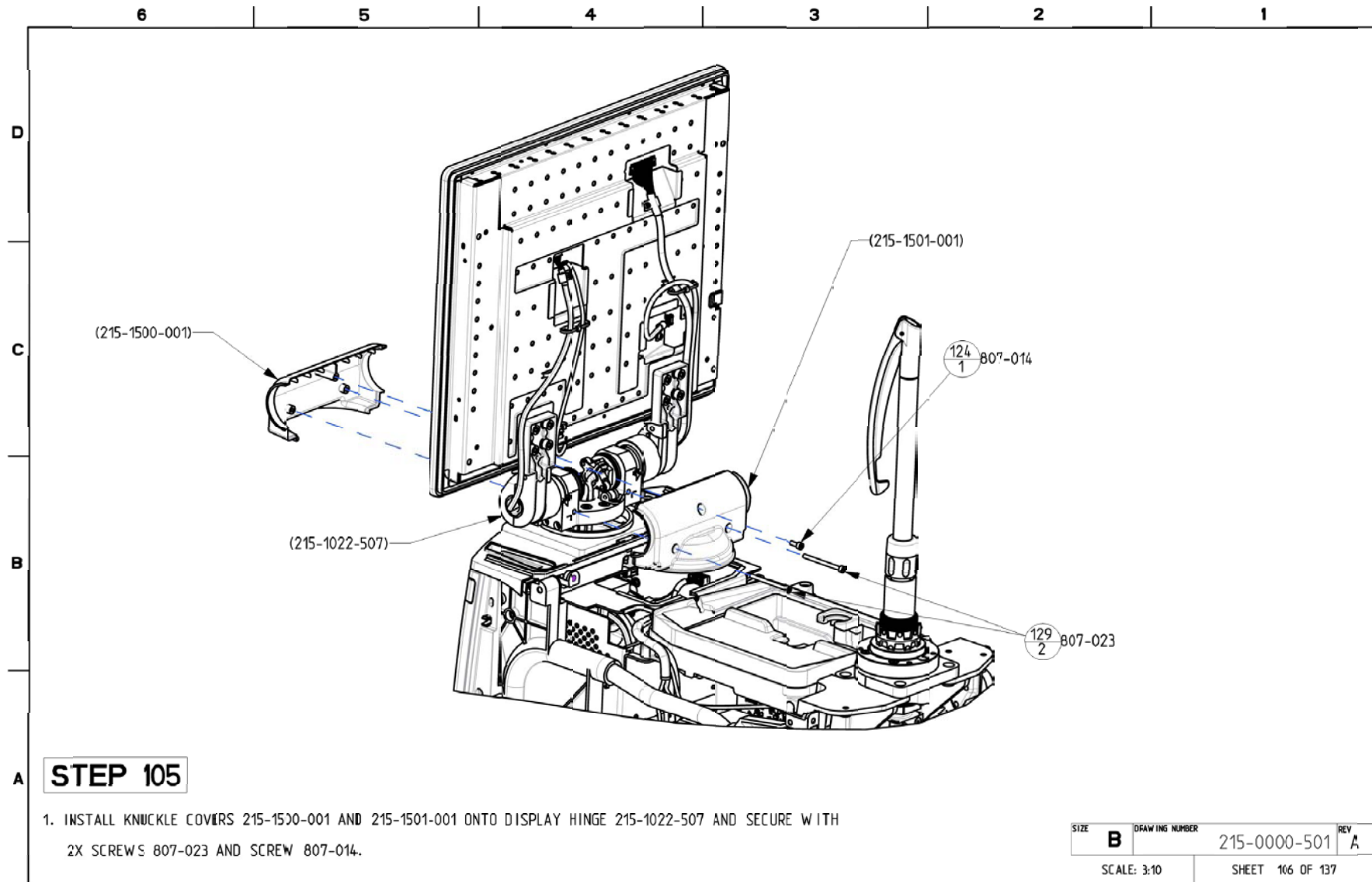


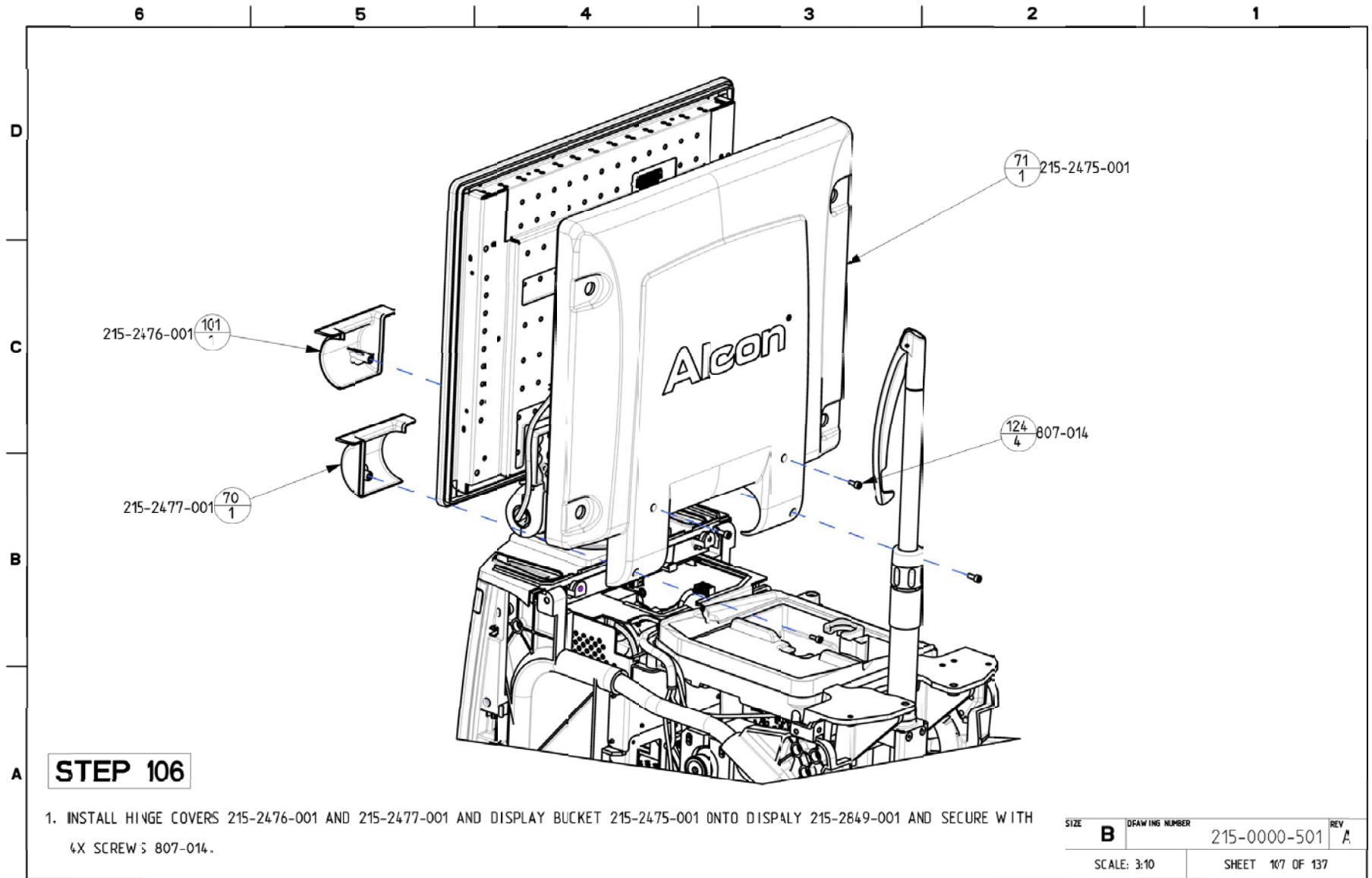


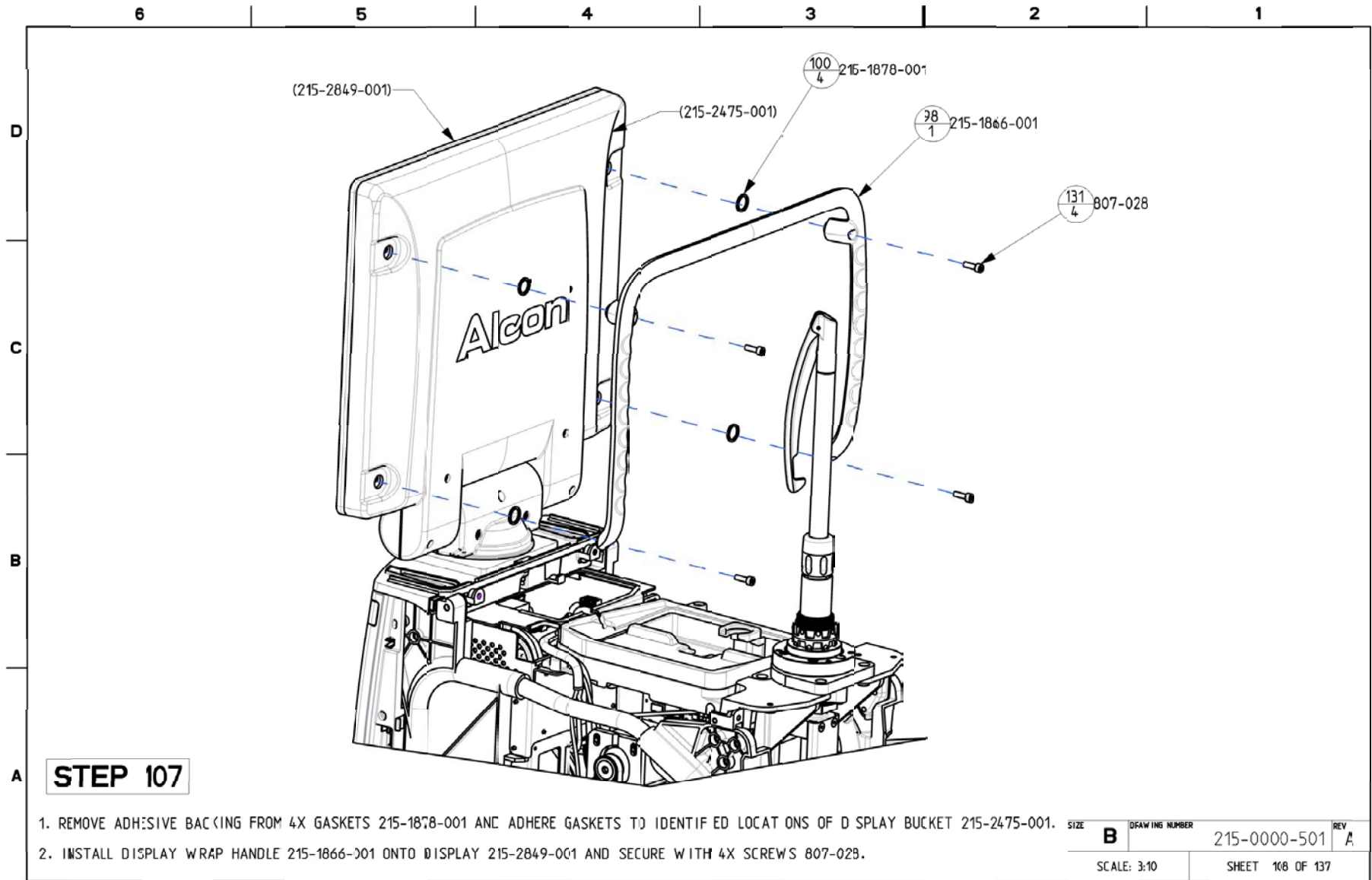


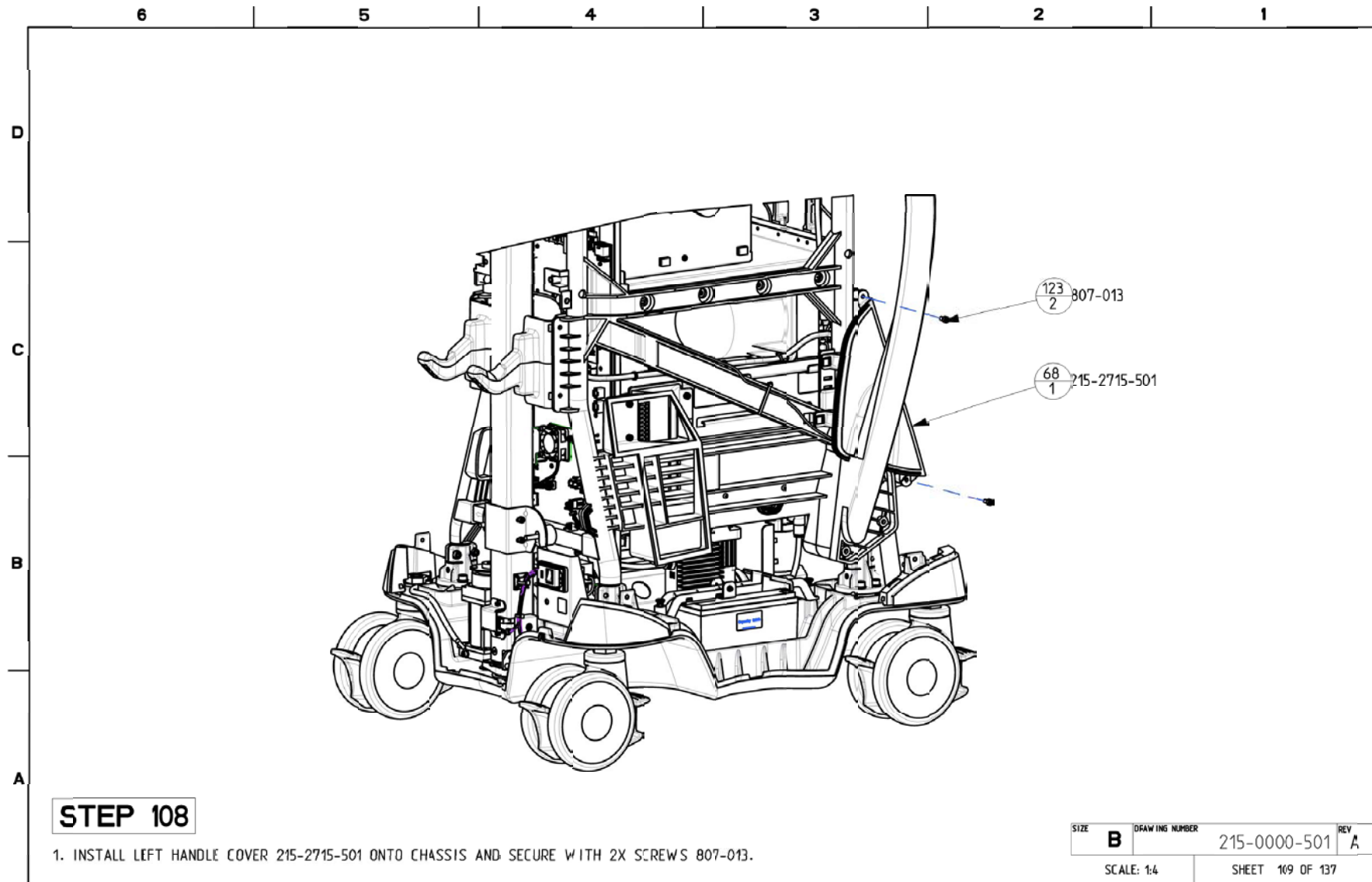


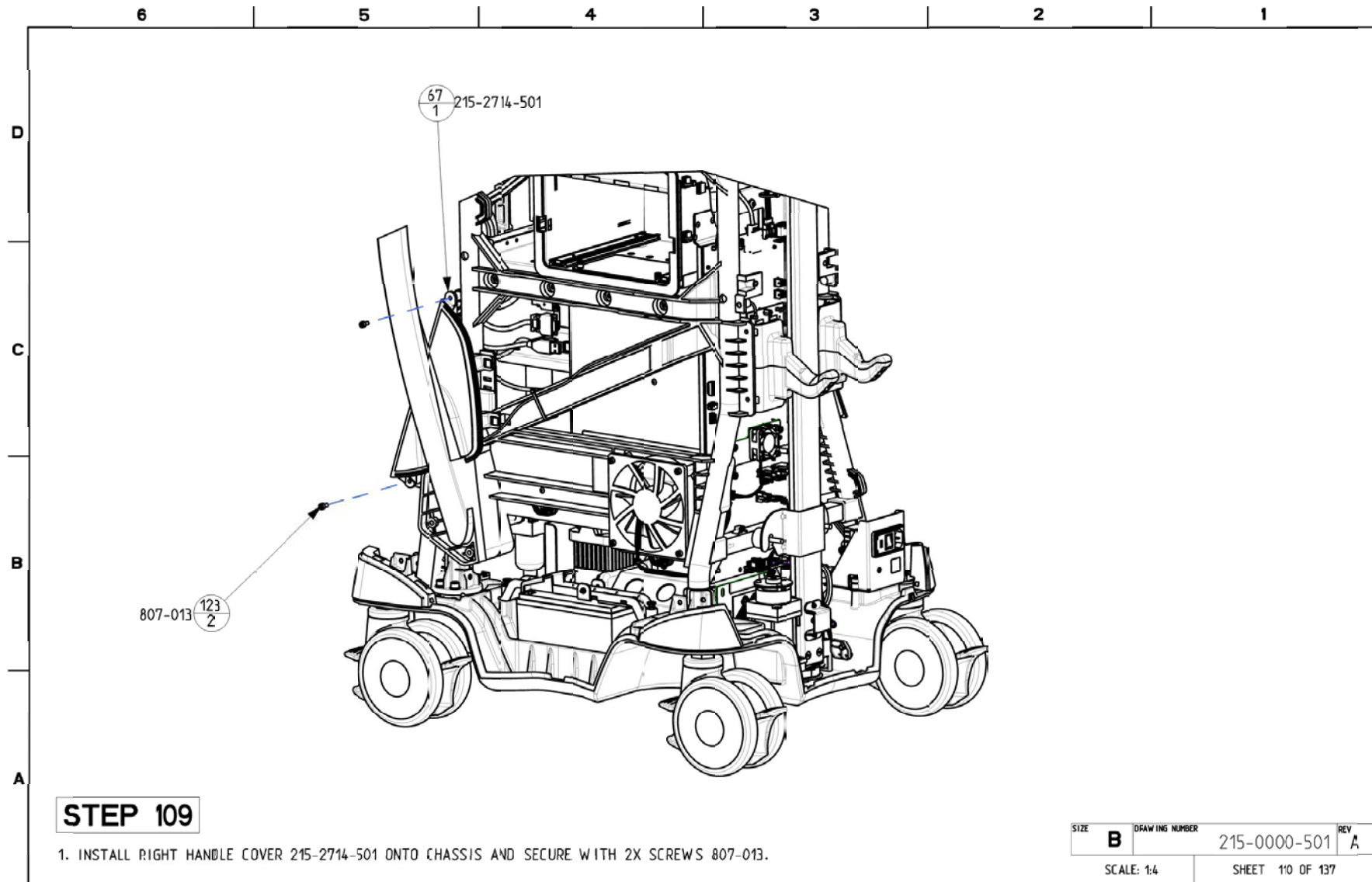


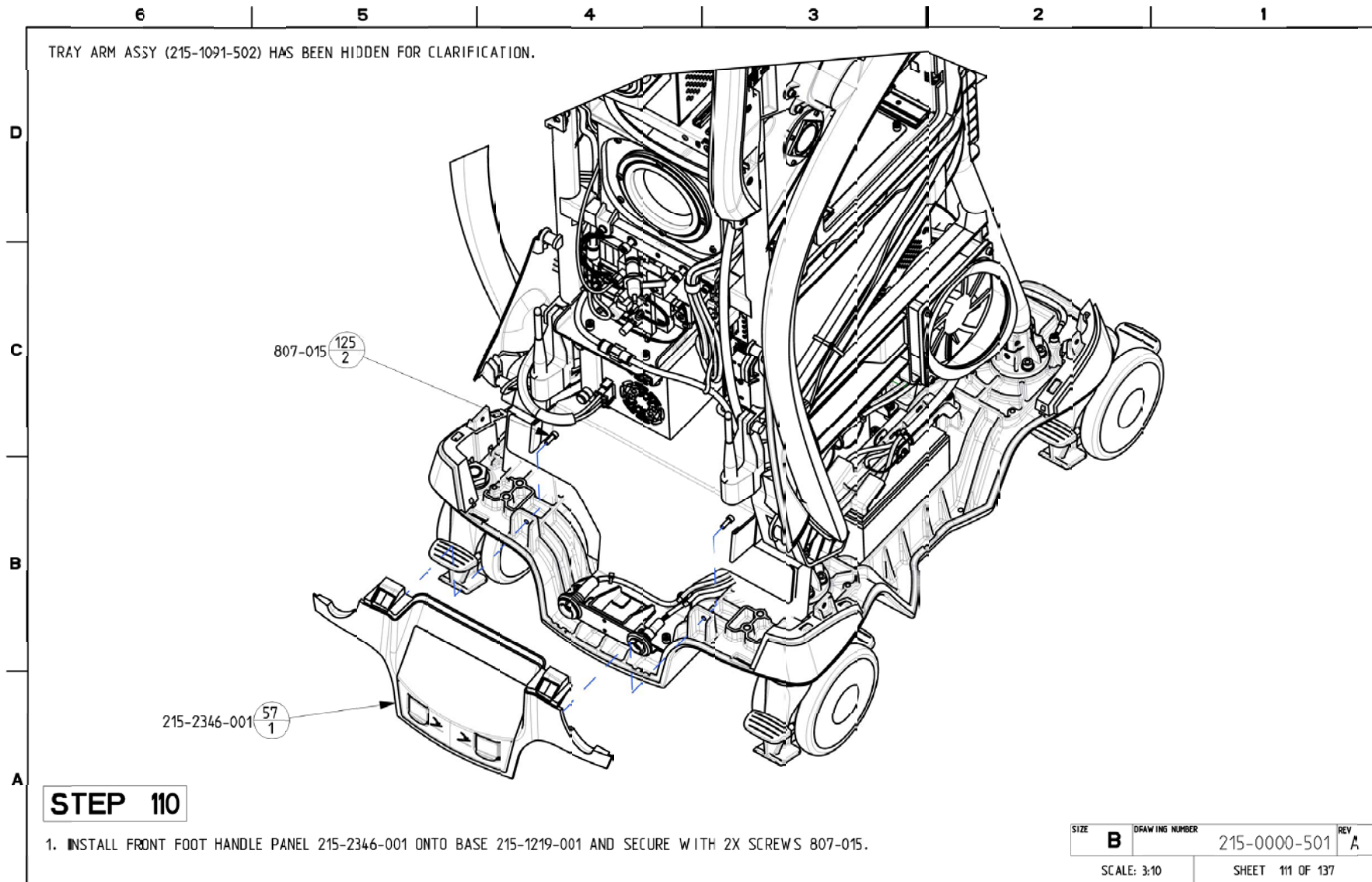


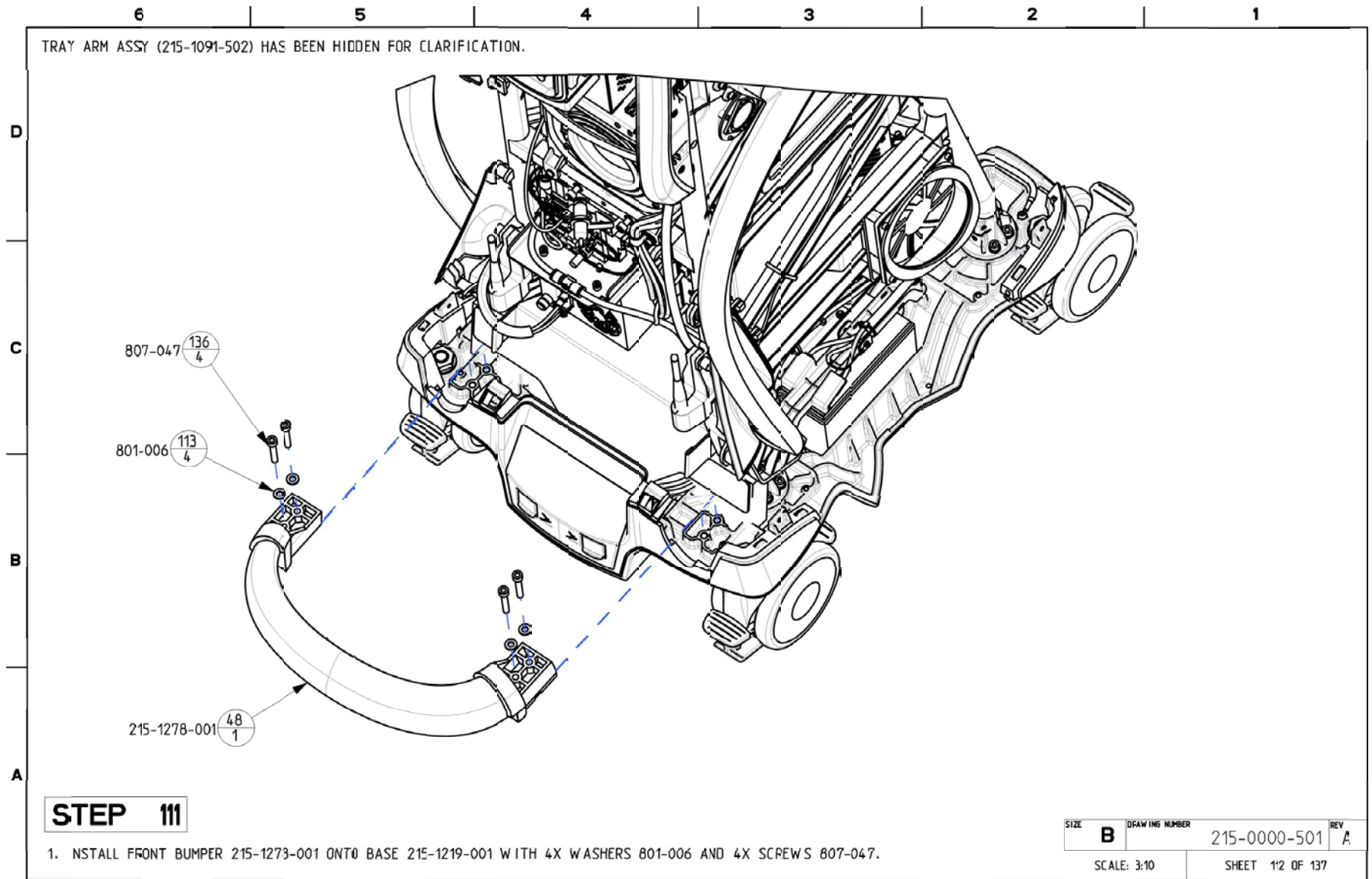


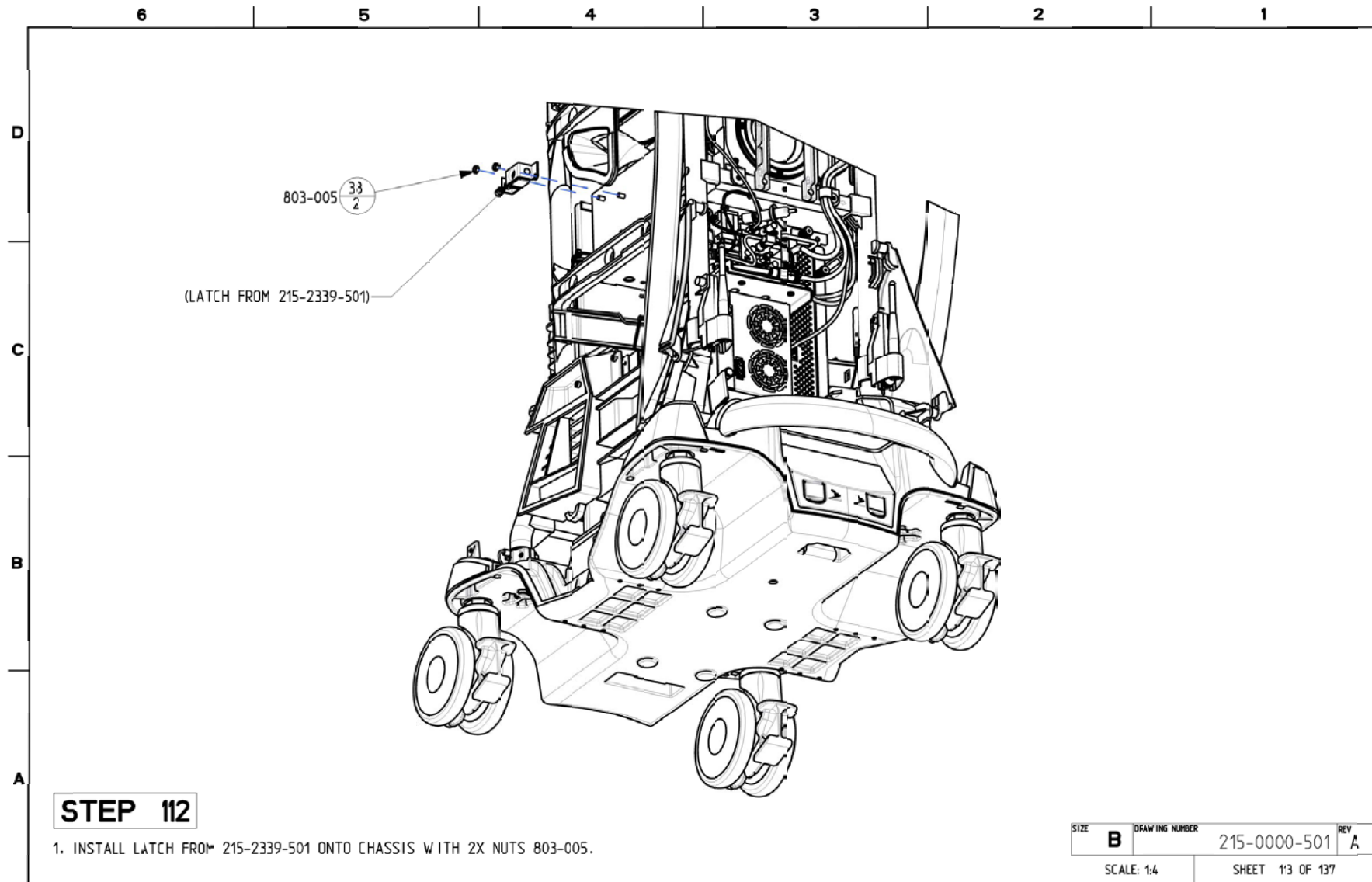


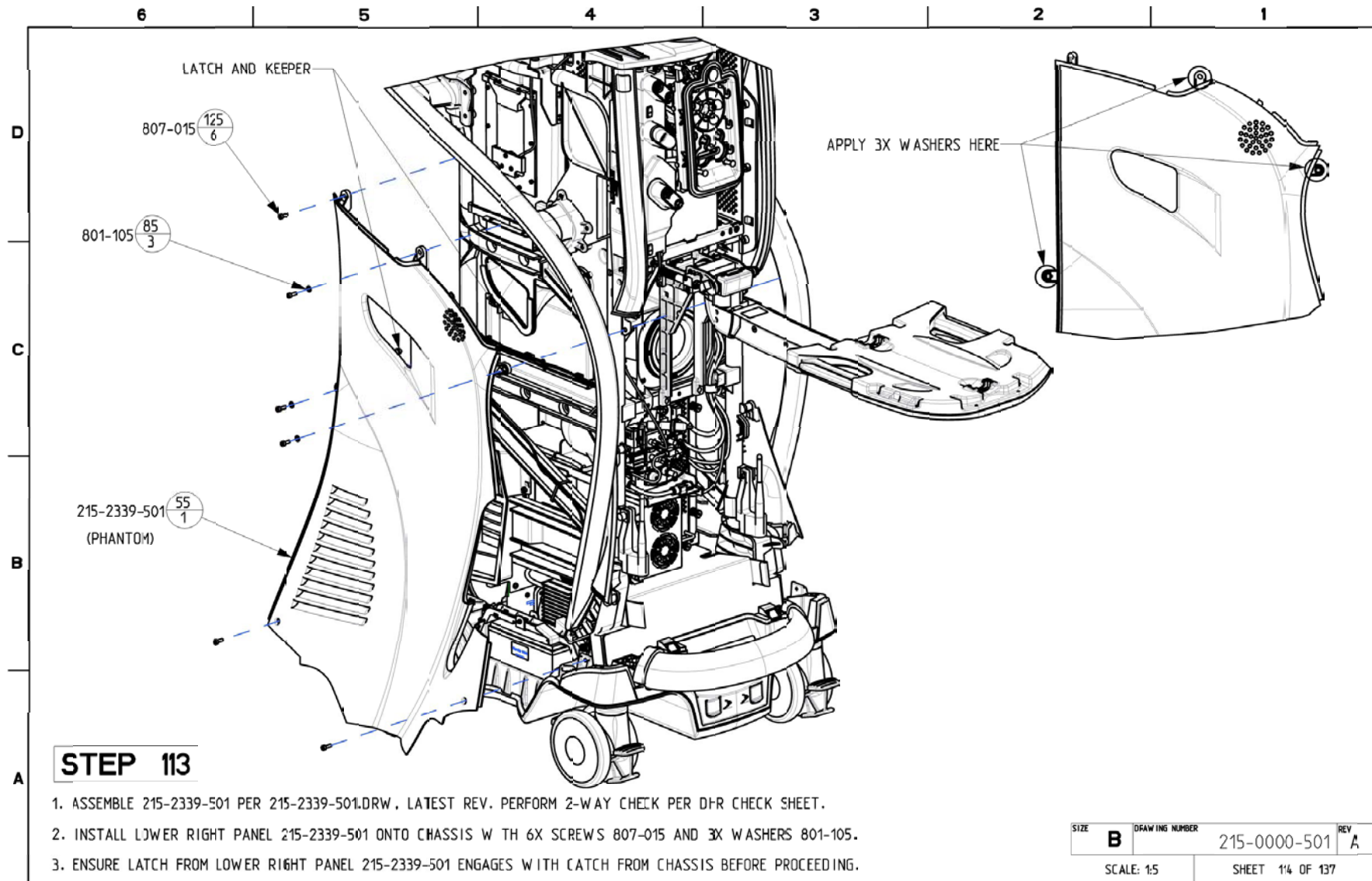


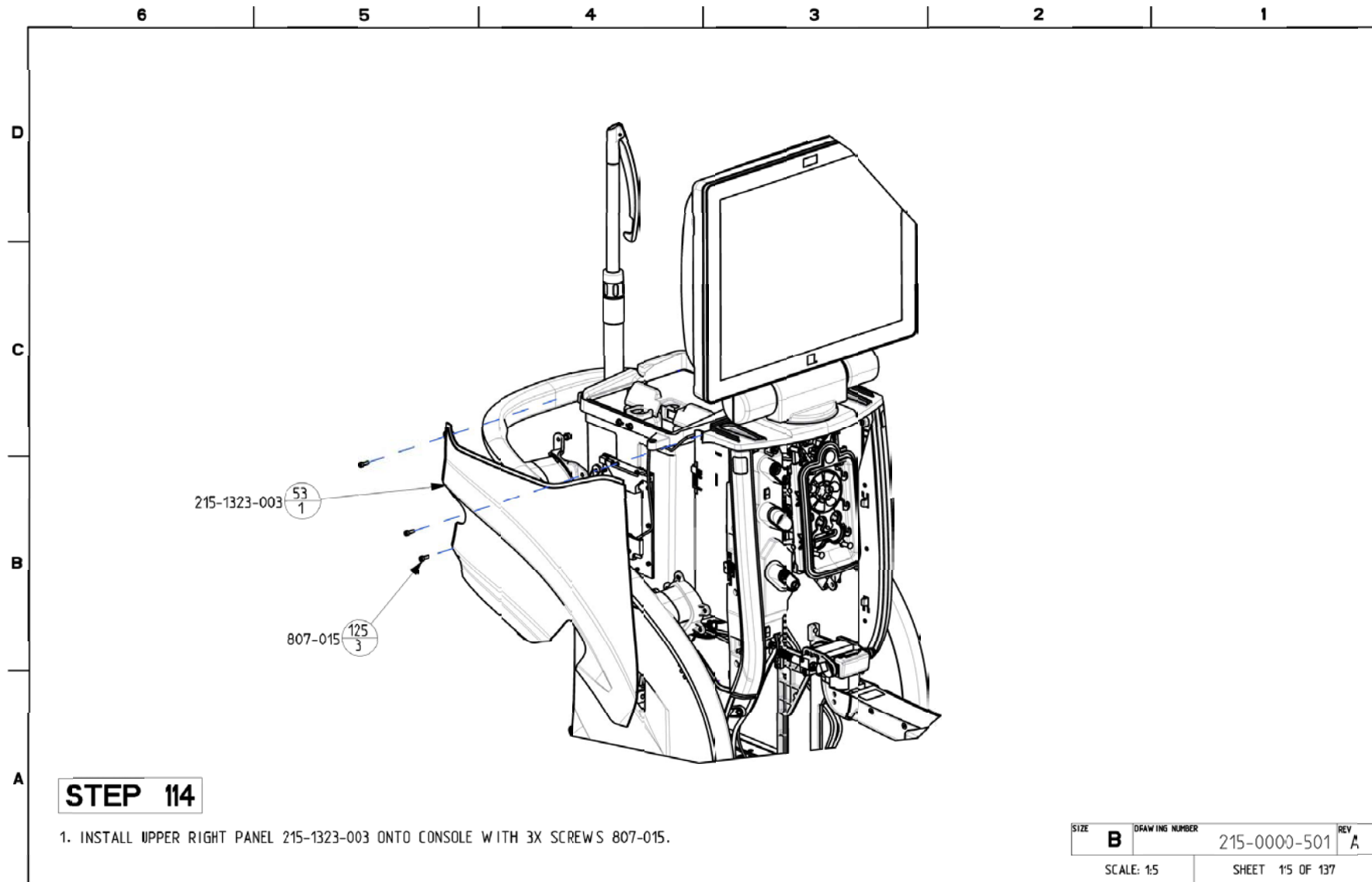


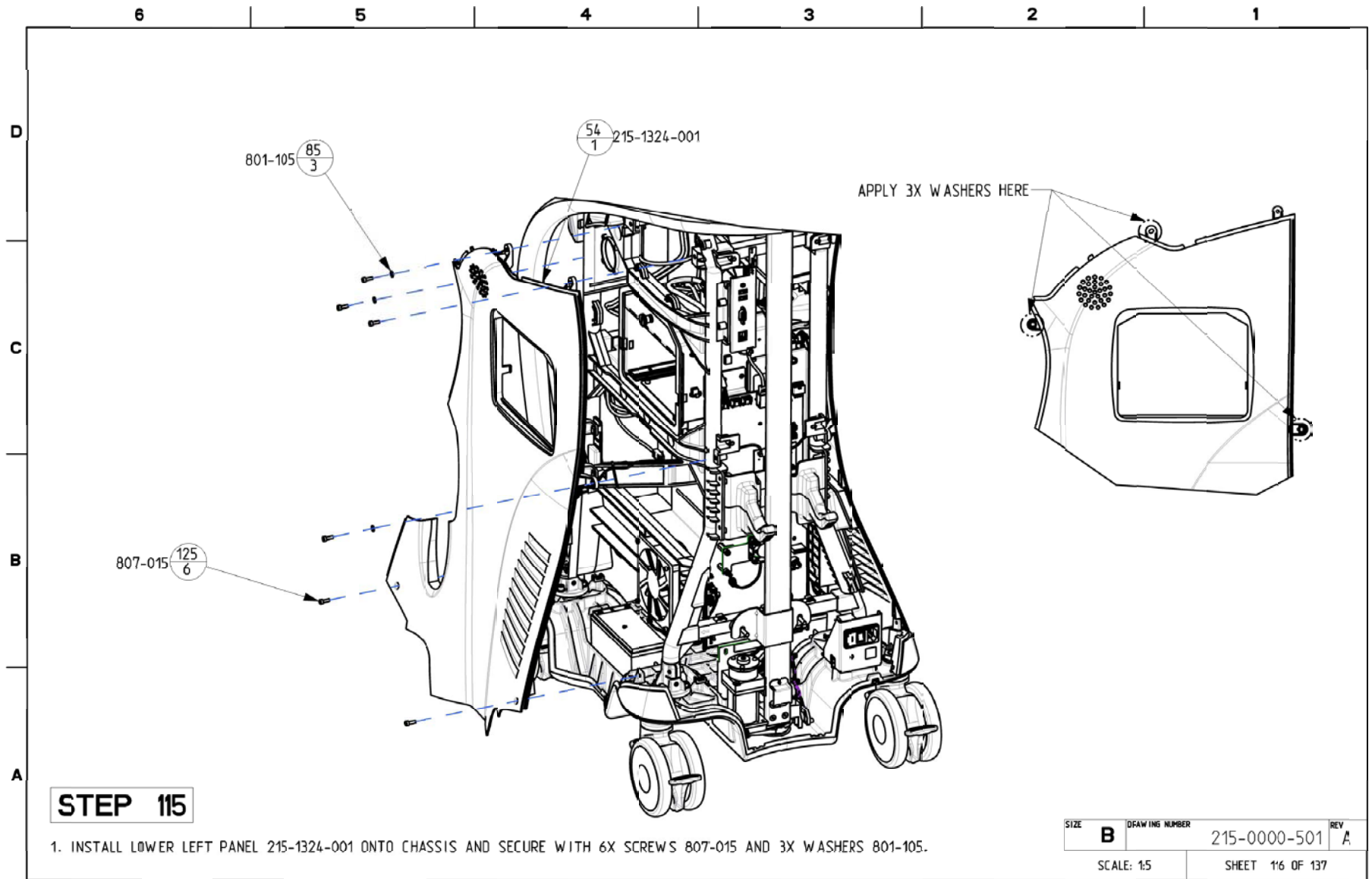


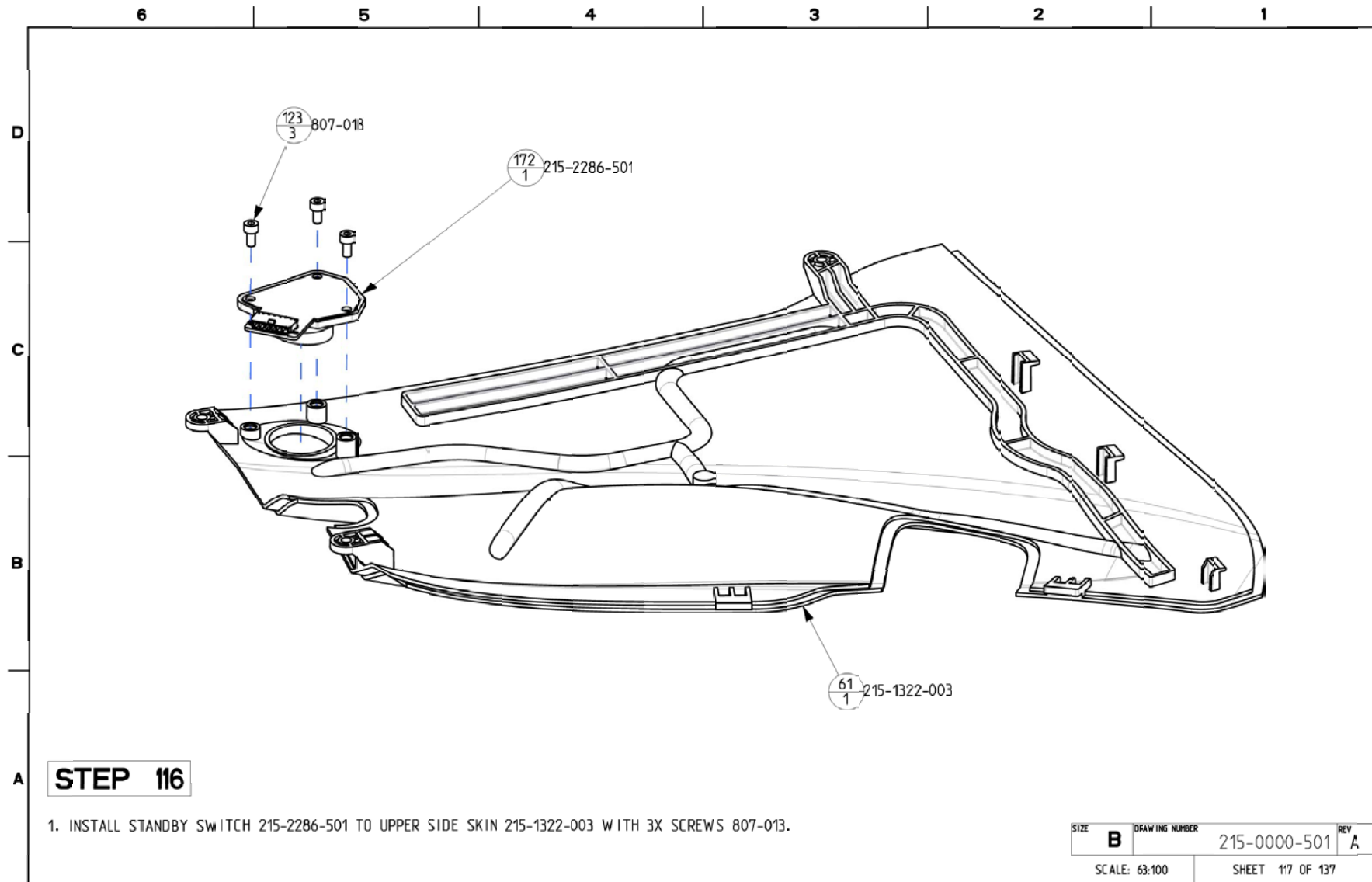


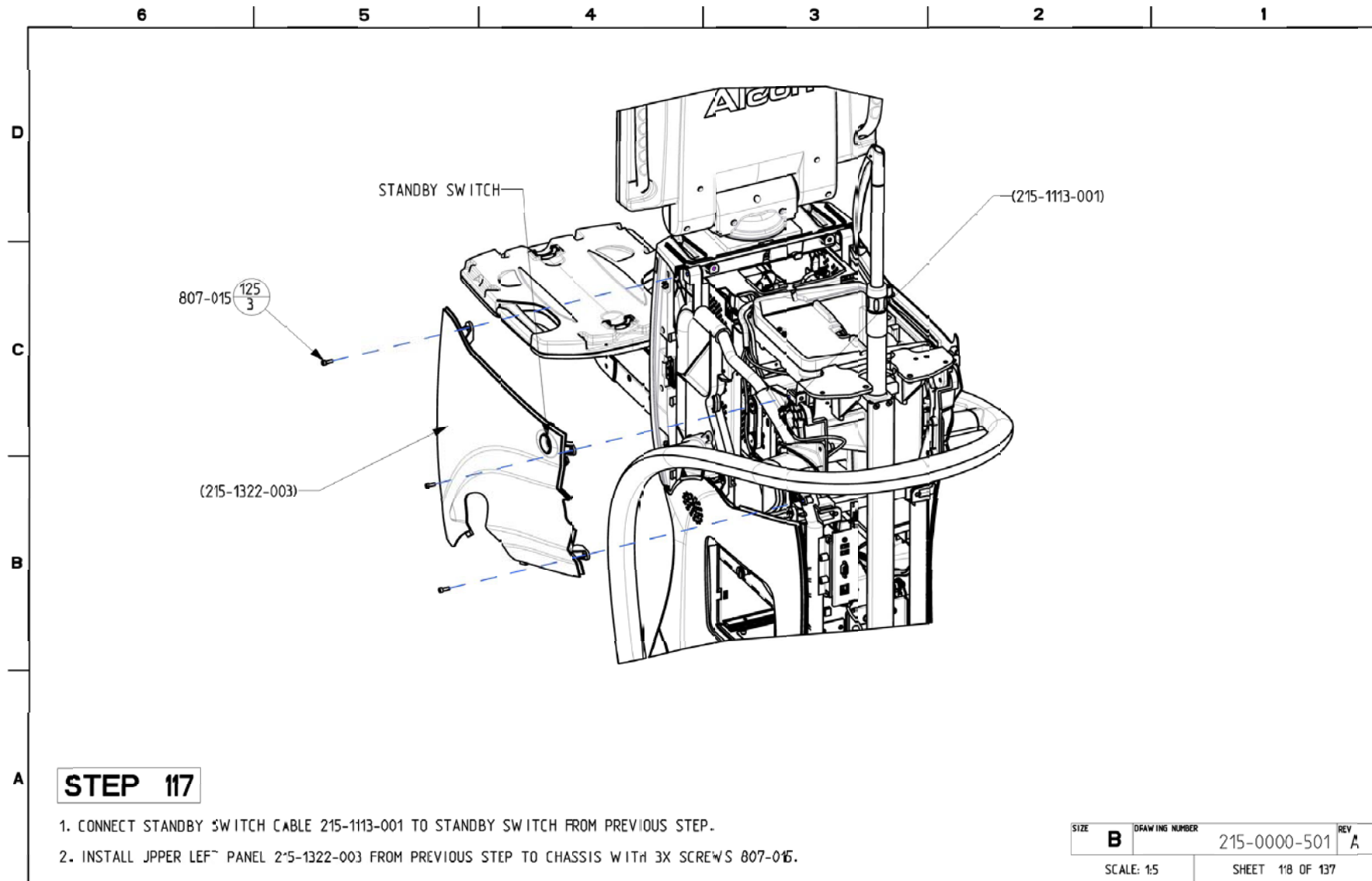


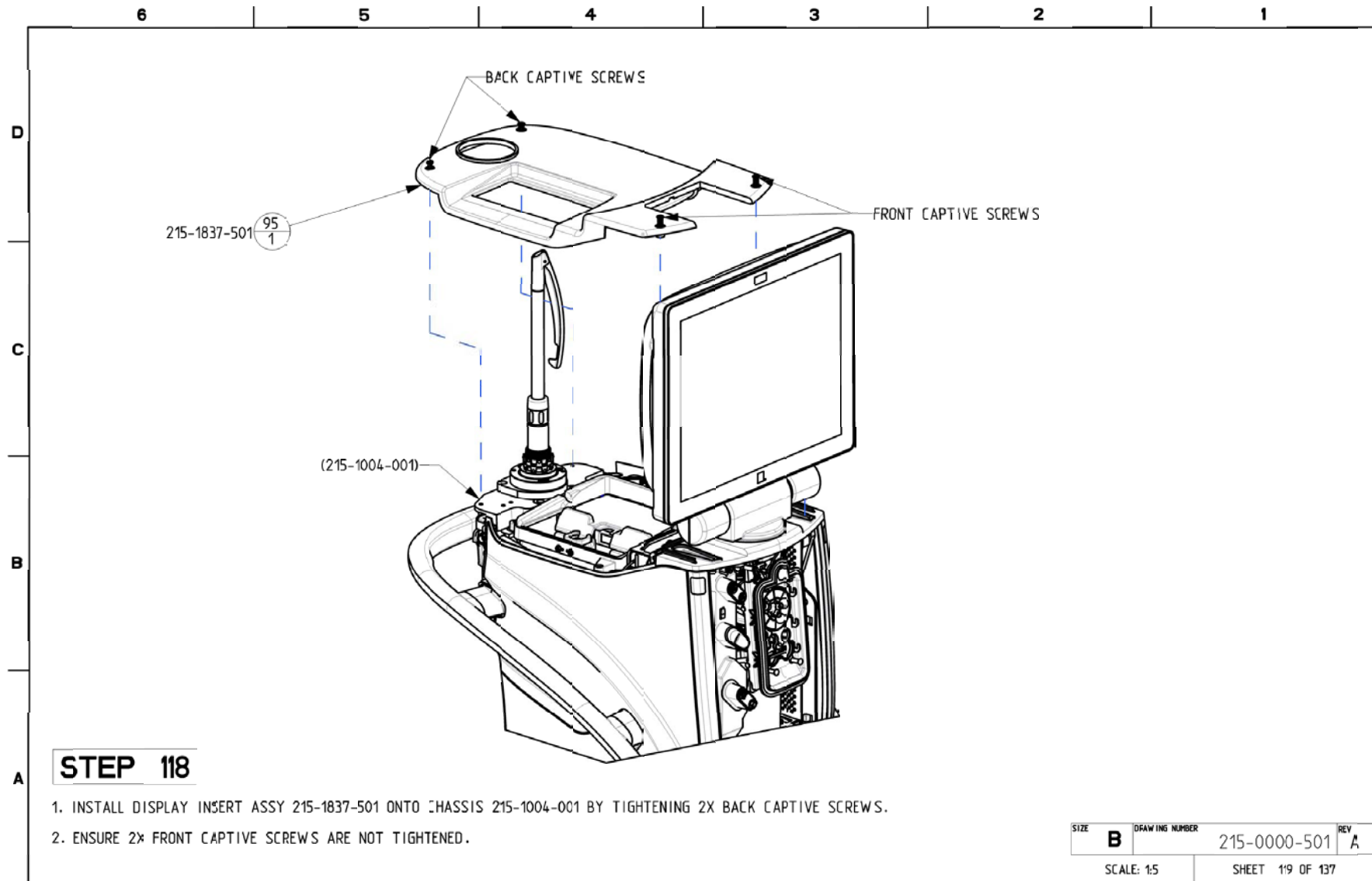


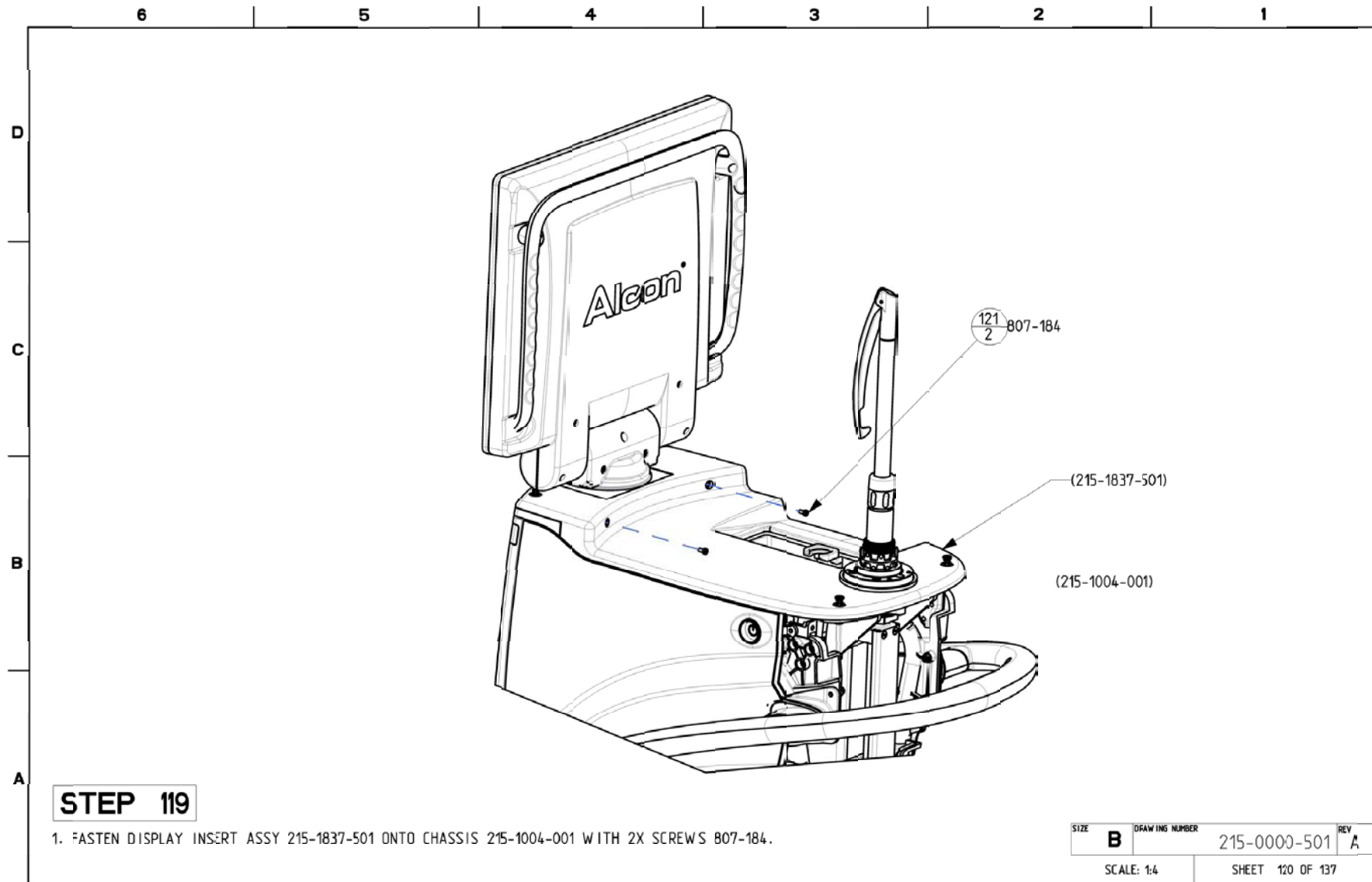


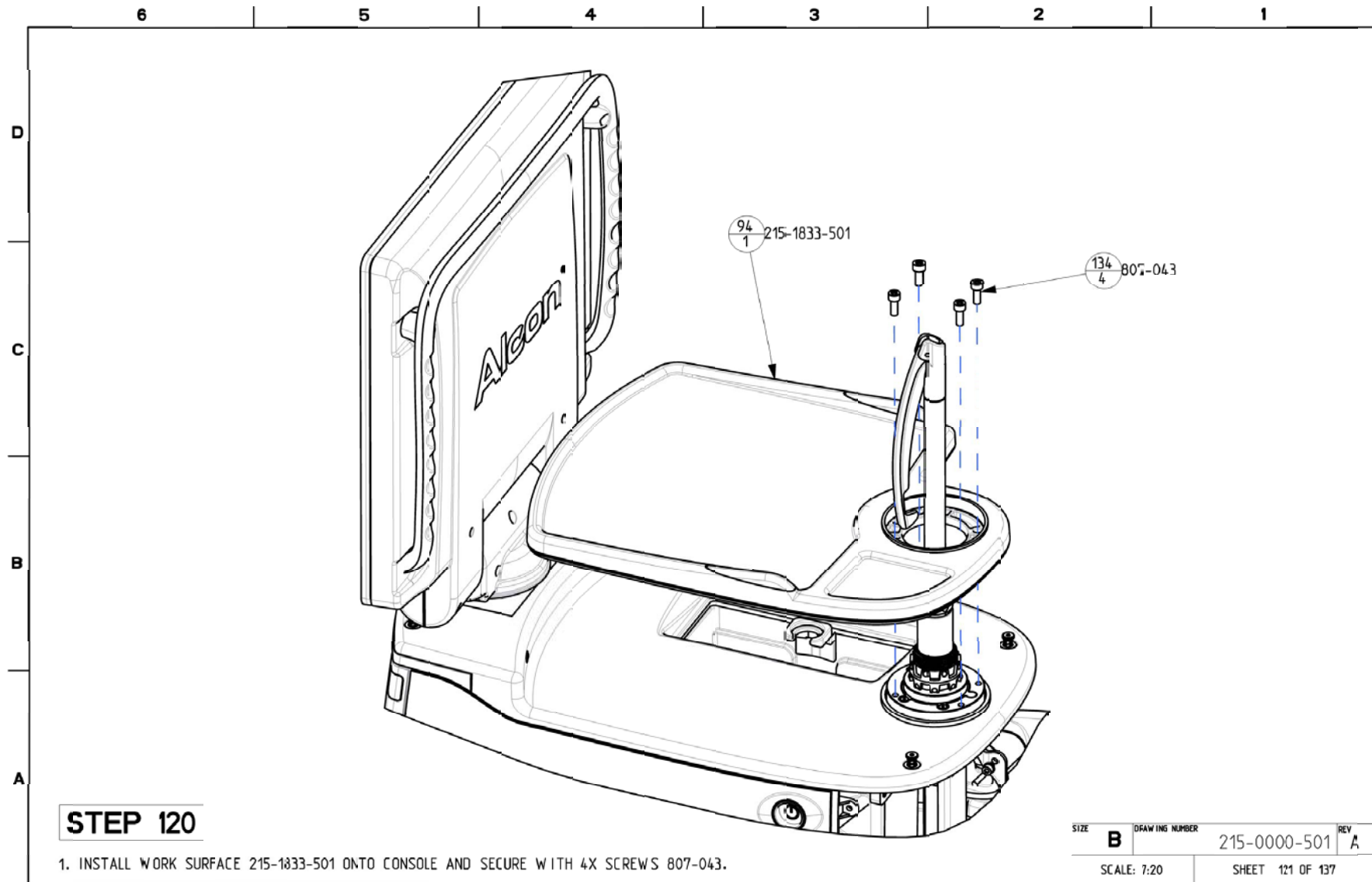


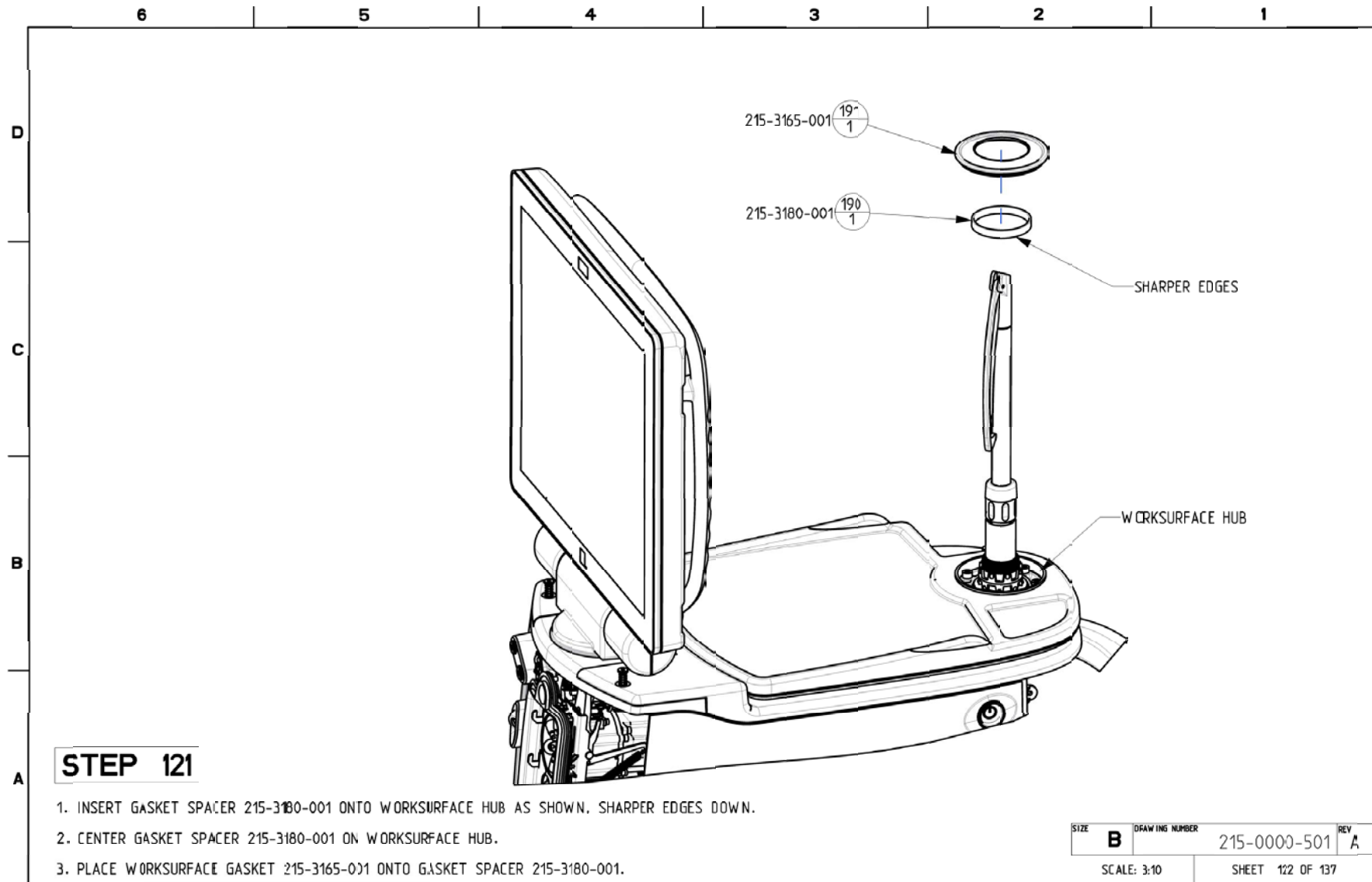


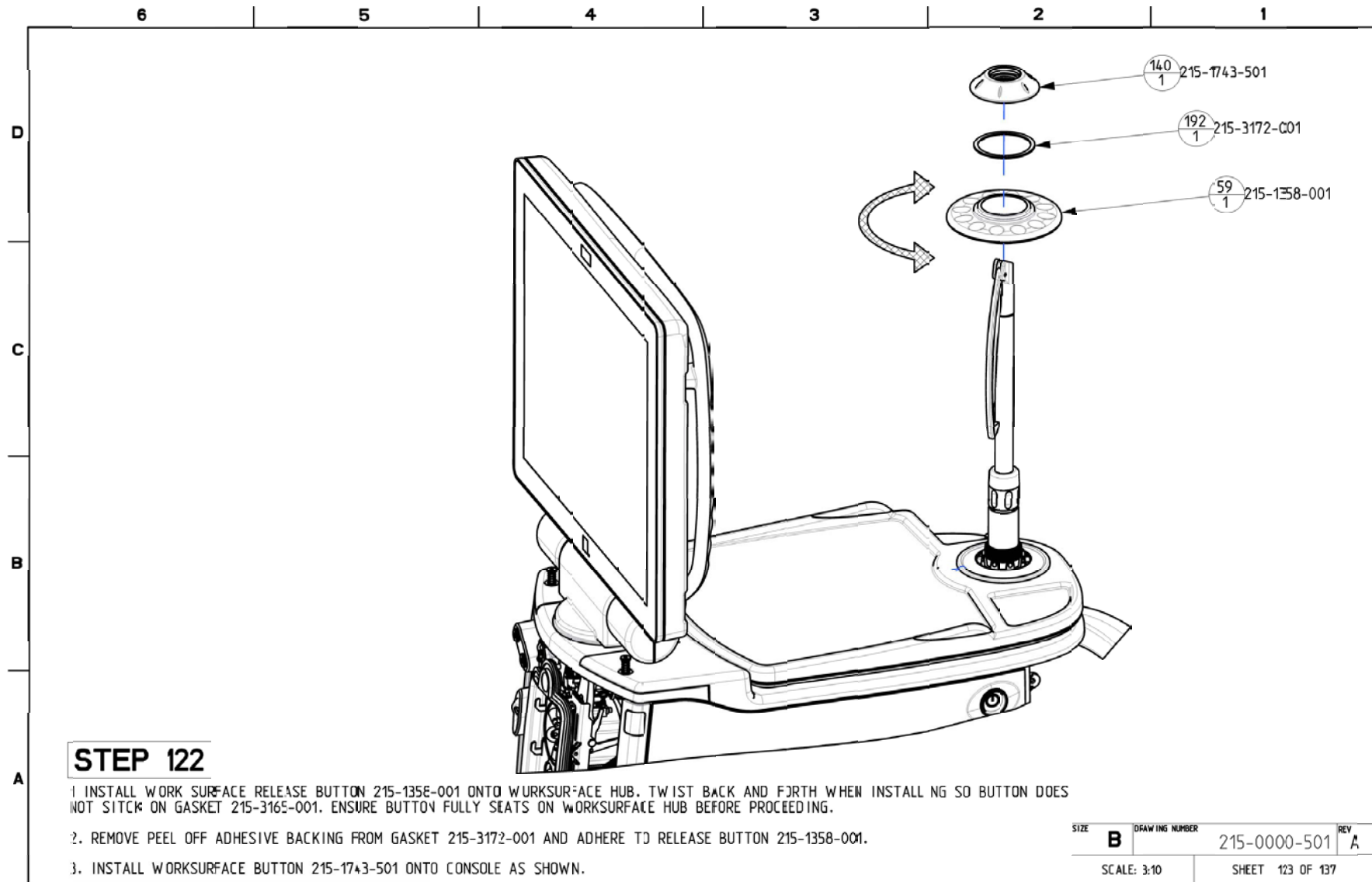


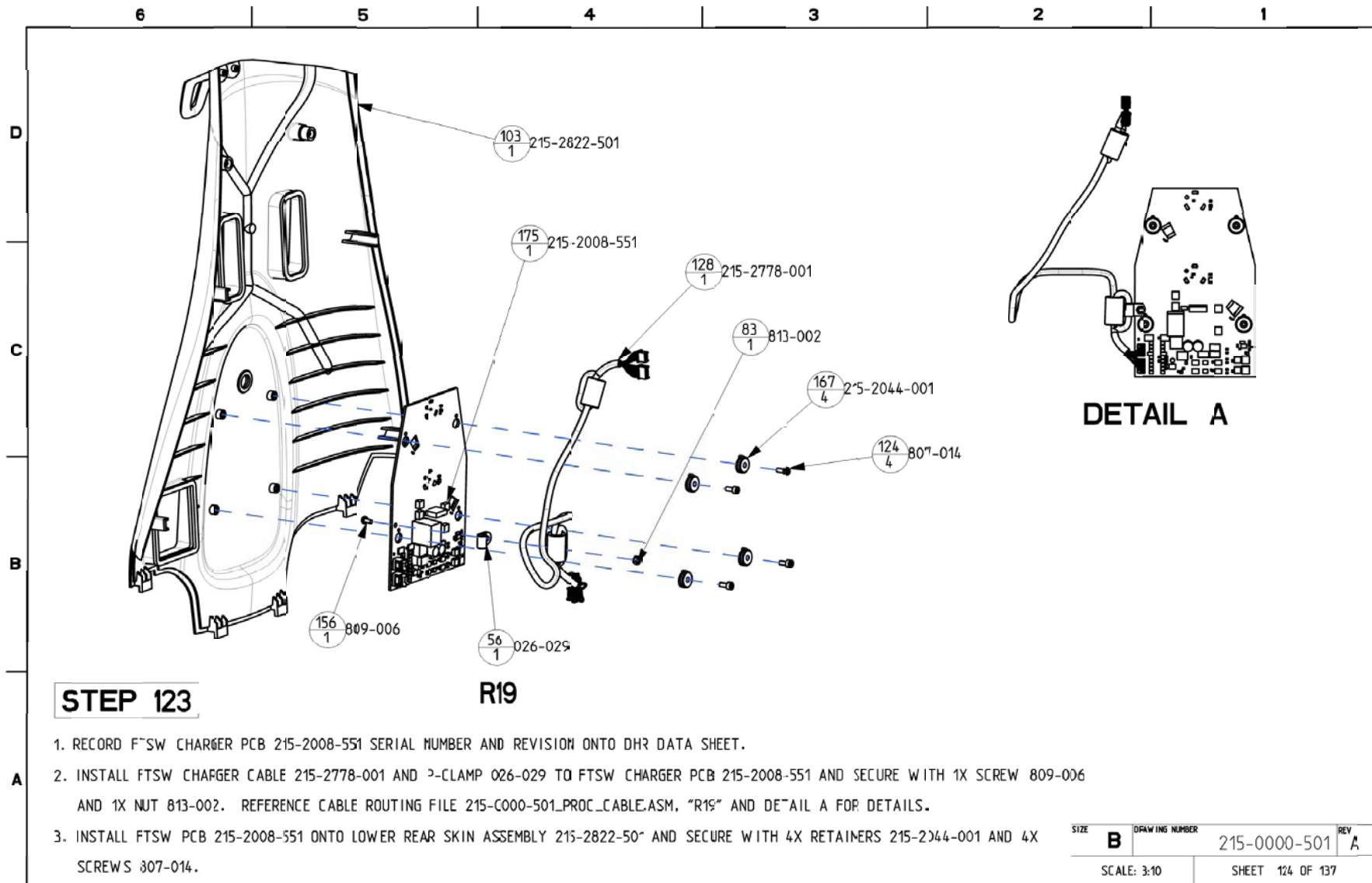


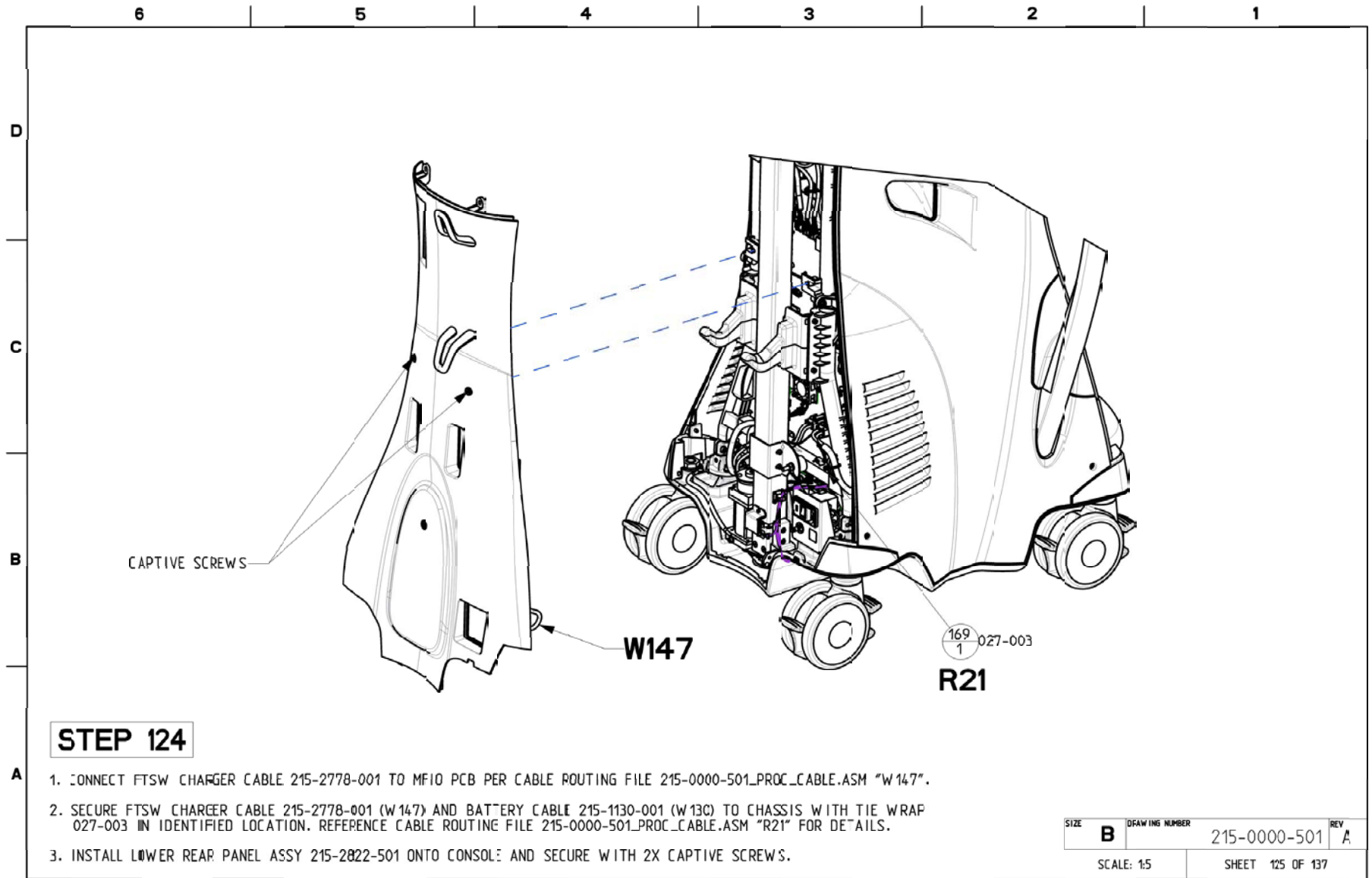


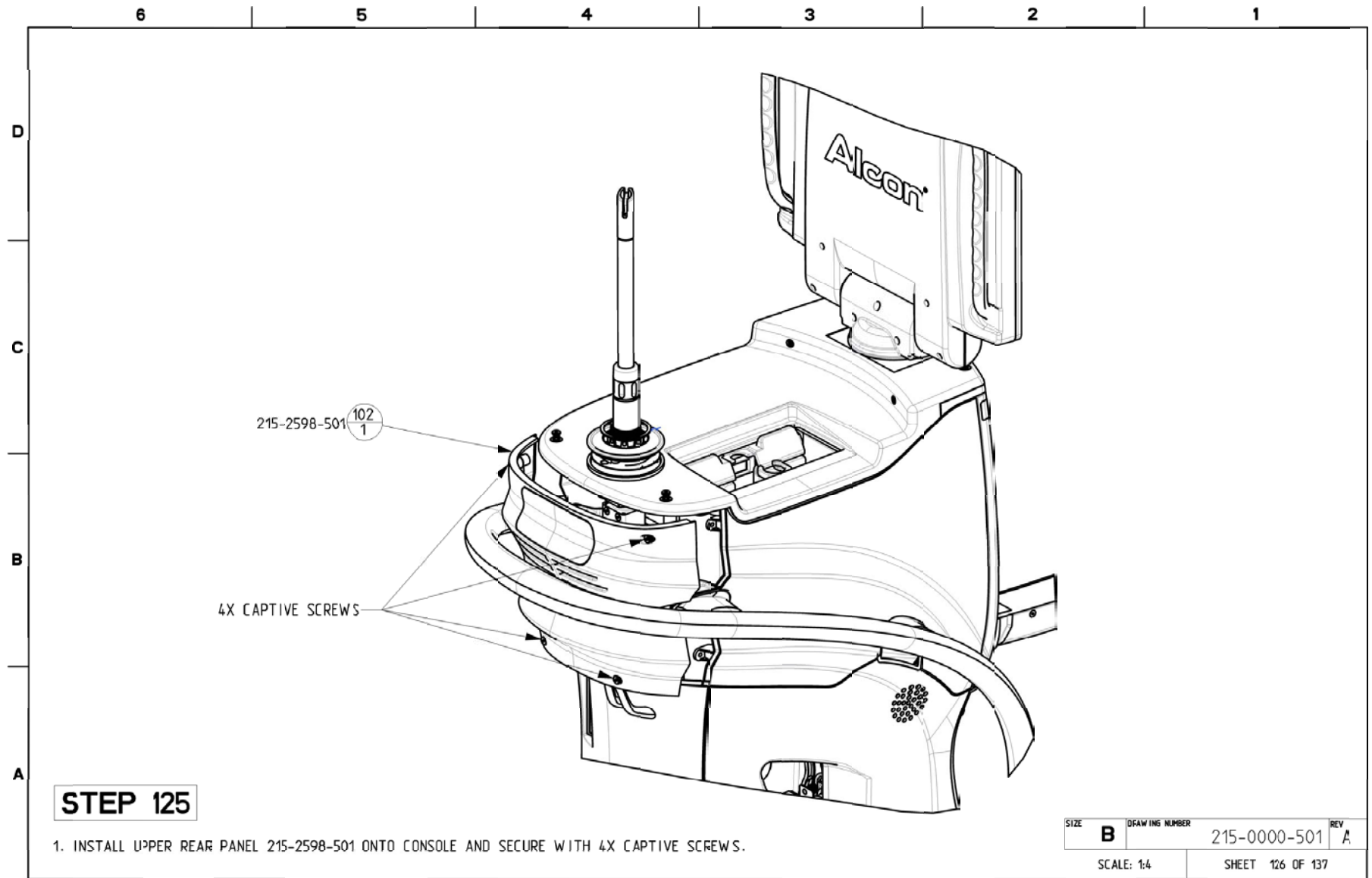


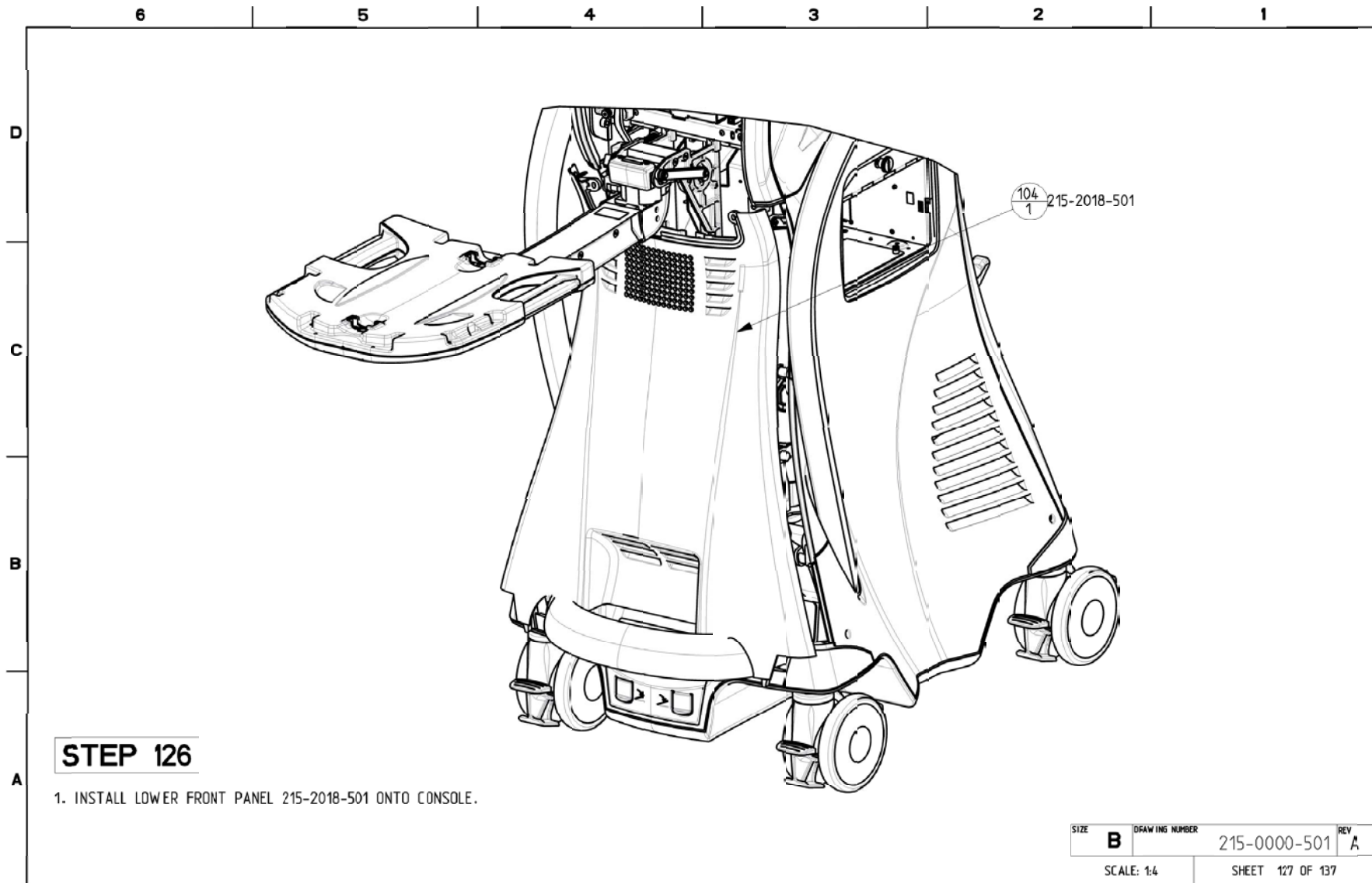


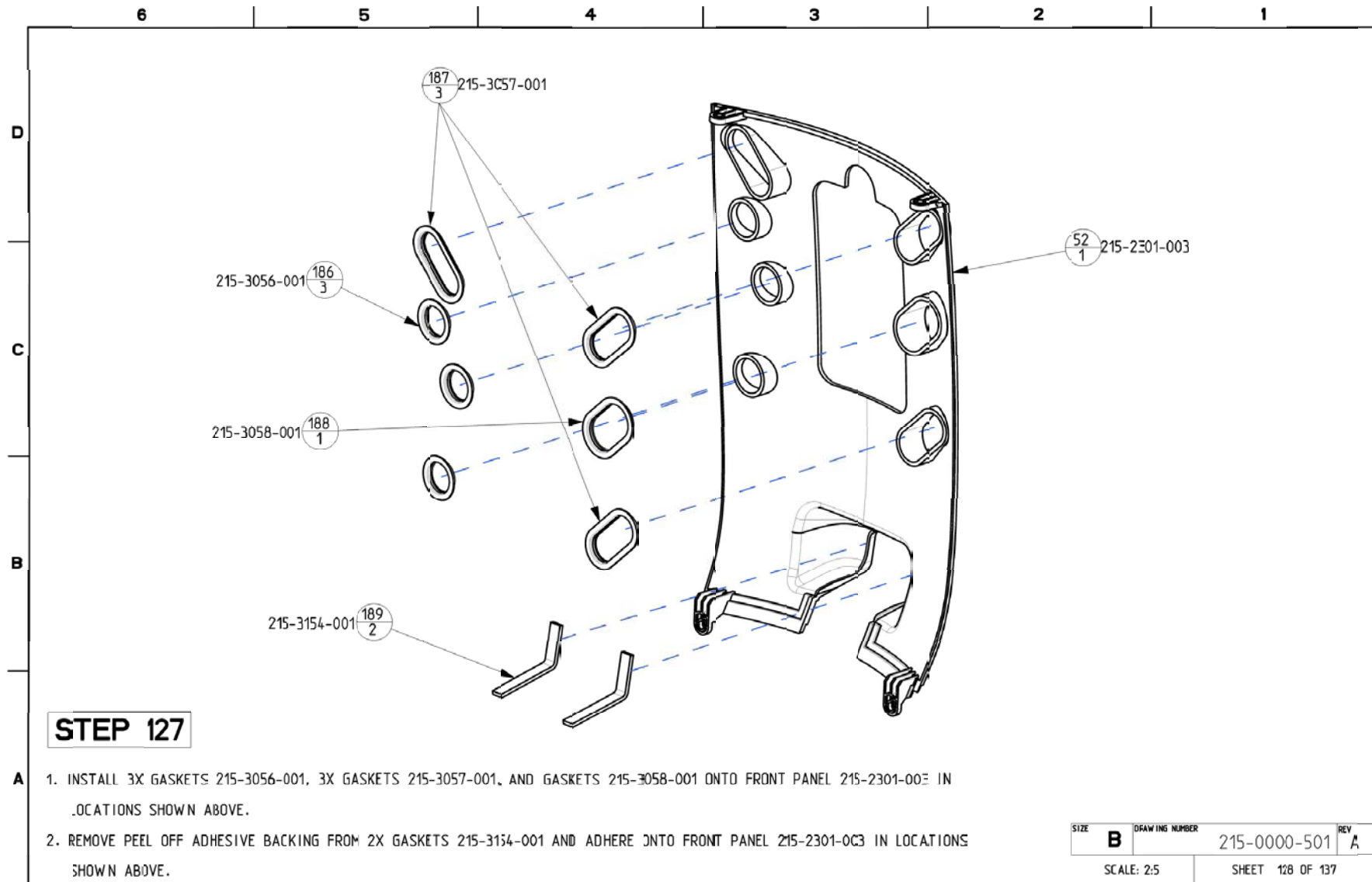












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1

TRAY ARM ASSY (215-1091-502) HAS BEEN HIDDEN FOR CLARIFICATION.

D

C

B

A

FRONT CAPTIVE SCREWS OF 215-1837-501

(215-2301-003)

CAPTIVE SCREWS

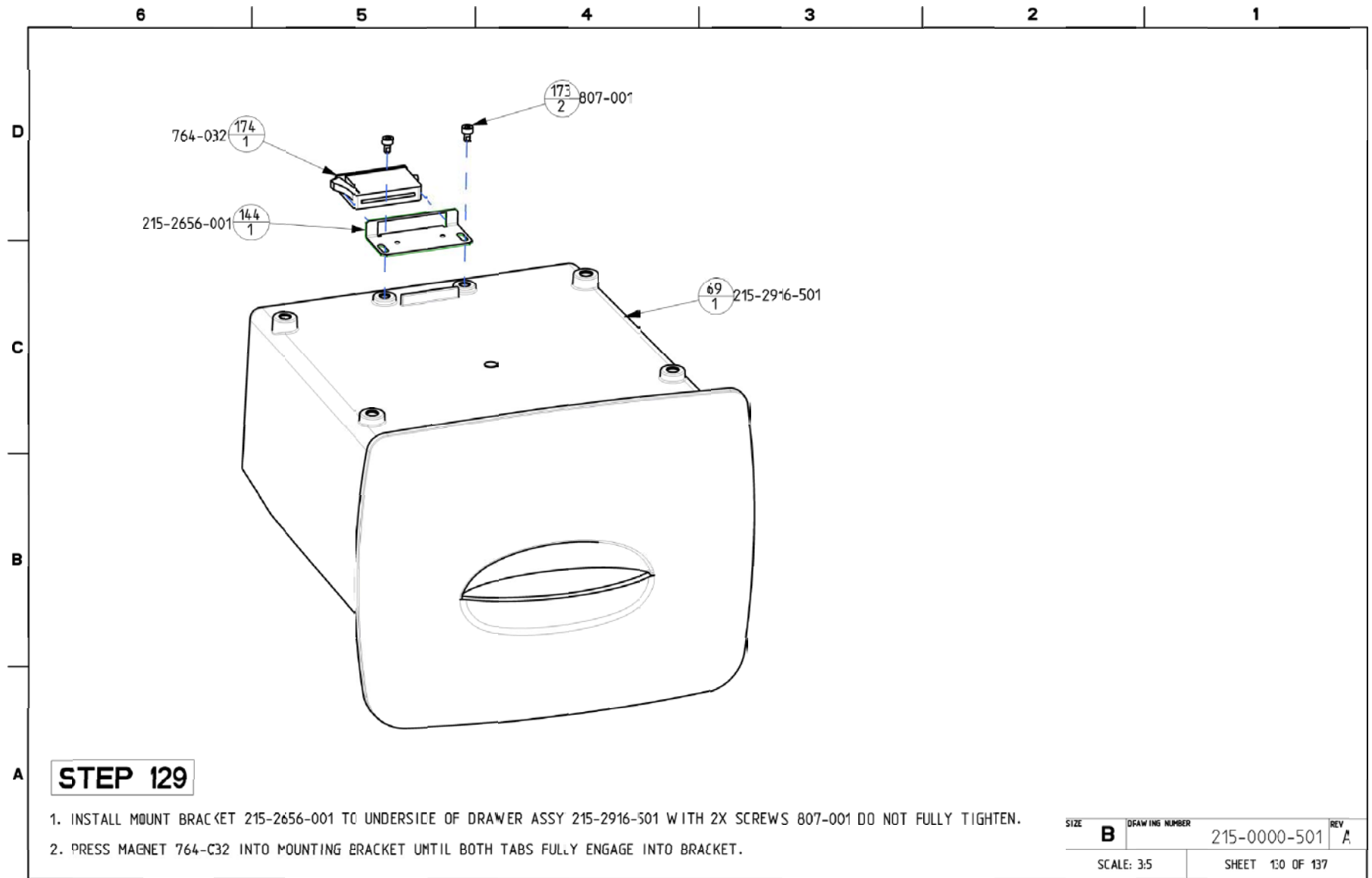
215-3111-501 $\frac{44}{1}$

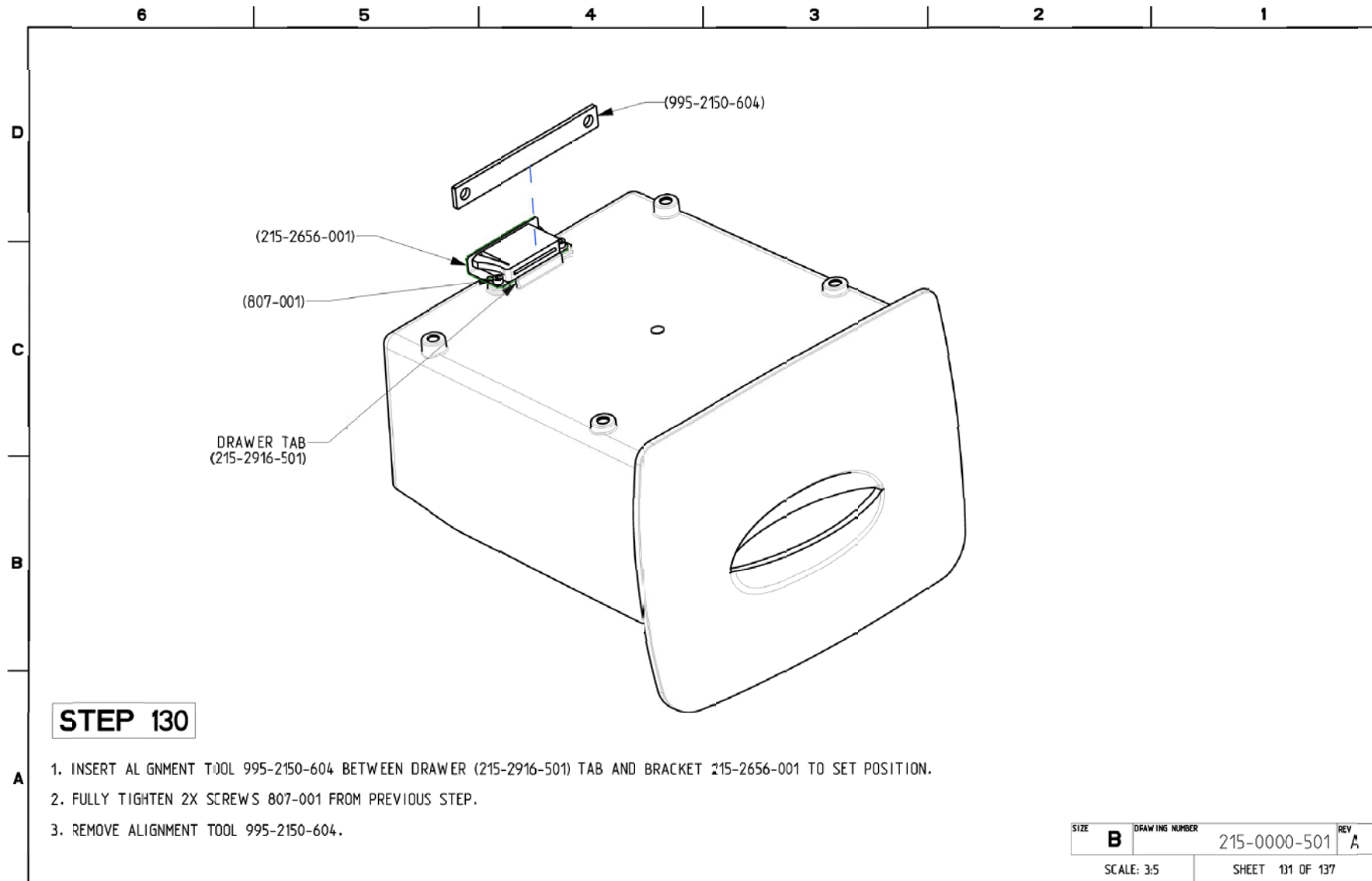
(215-2018-501)

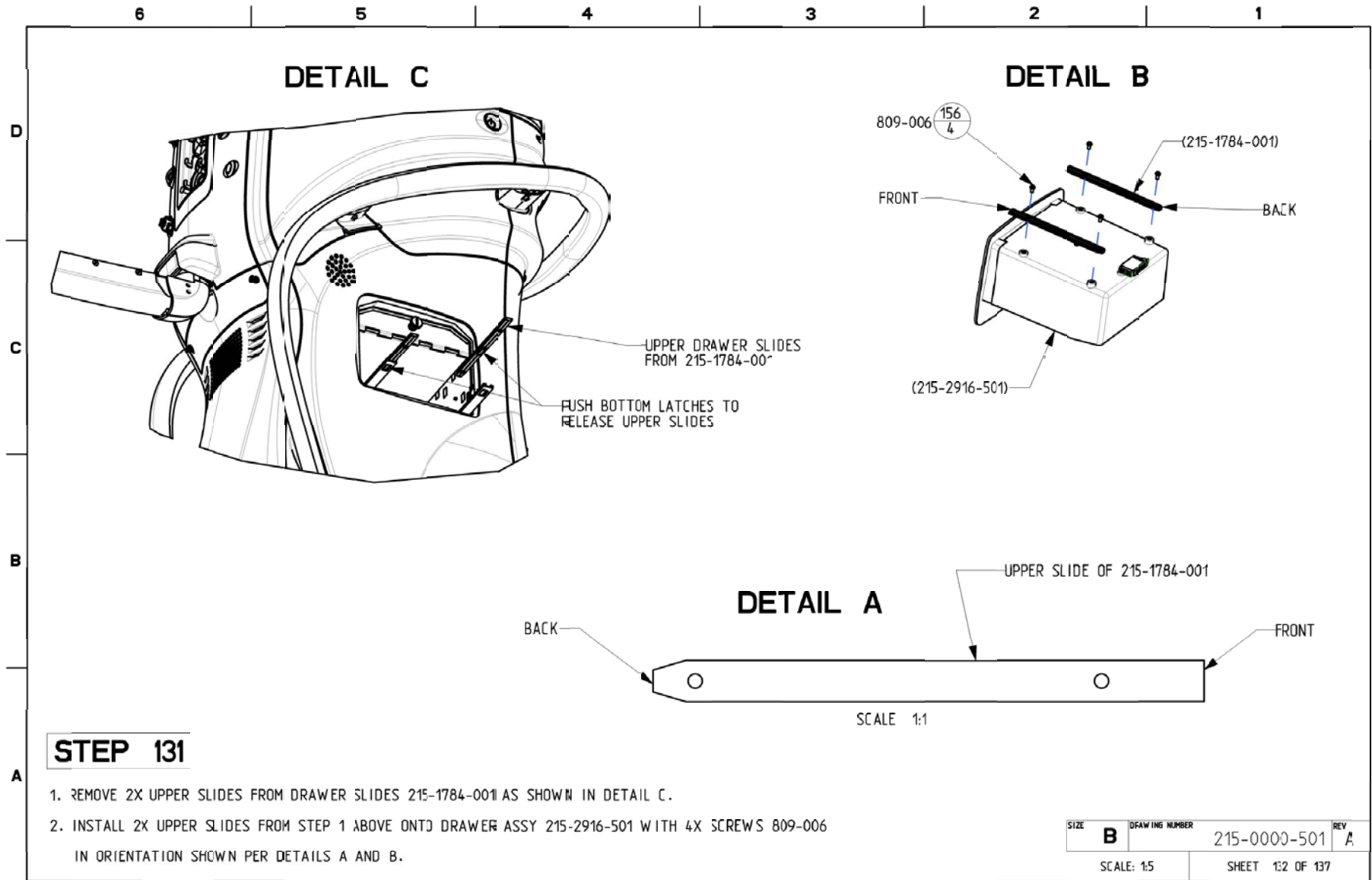
STEP 128

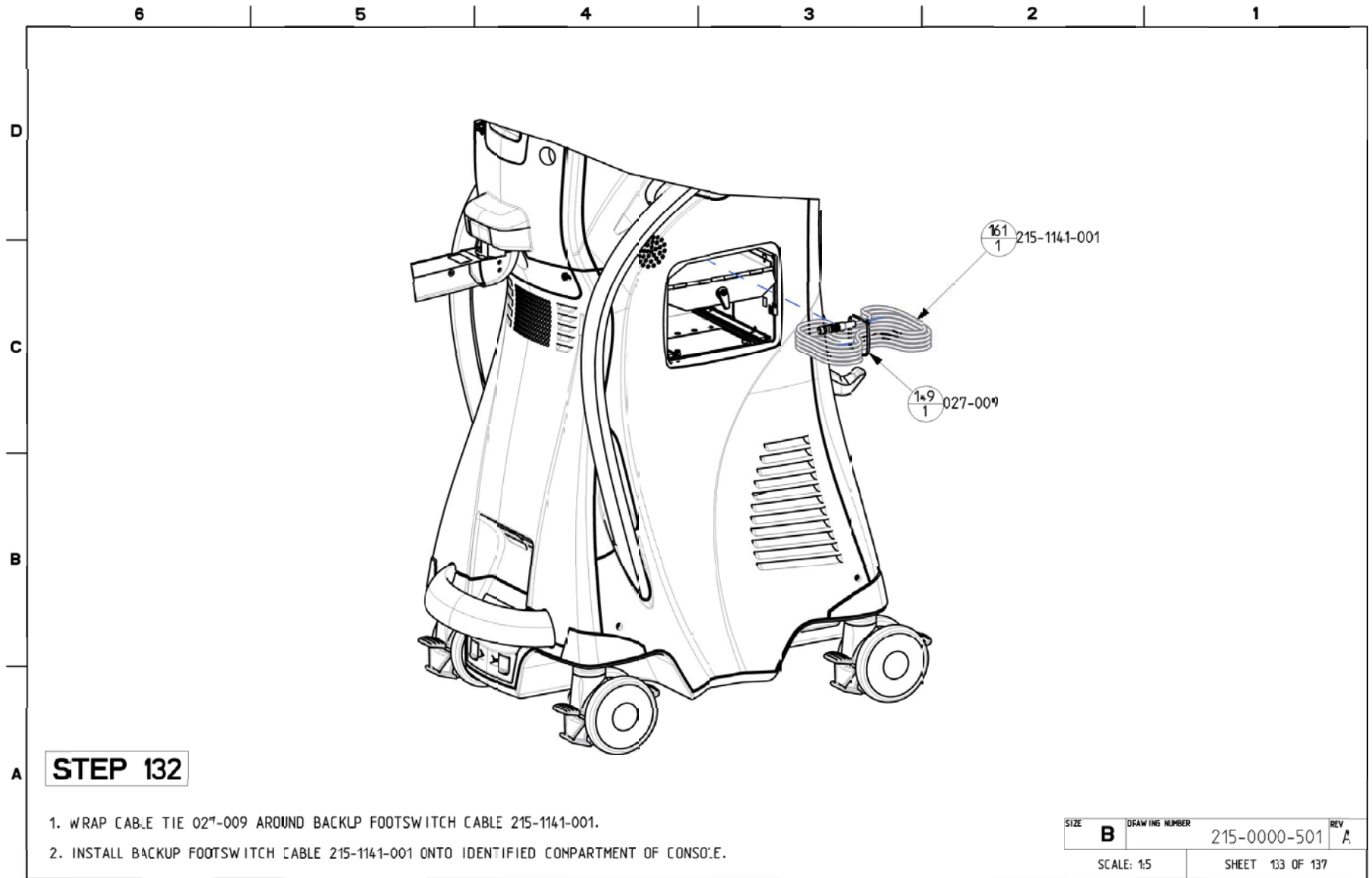
1. INSTALL UPPER FRONT PANEL 215-2301-003 ONTO CONSOLE.
2. INSTALL FRONT VENT PANEL 215-3111-501 ONTO CONSOLE AND SECURE PANELS 215-2301-003, 215-3111-501 AND 215-2018-501 TO CONSOLE WITH 2X CAPTIVE SCREWS.
3. SECURE DISPLAY INSERT ASSY 215-1837-501 TO CONSOLE BY TIGHTENING 2X FRONT CAPTIVE SCREWS.

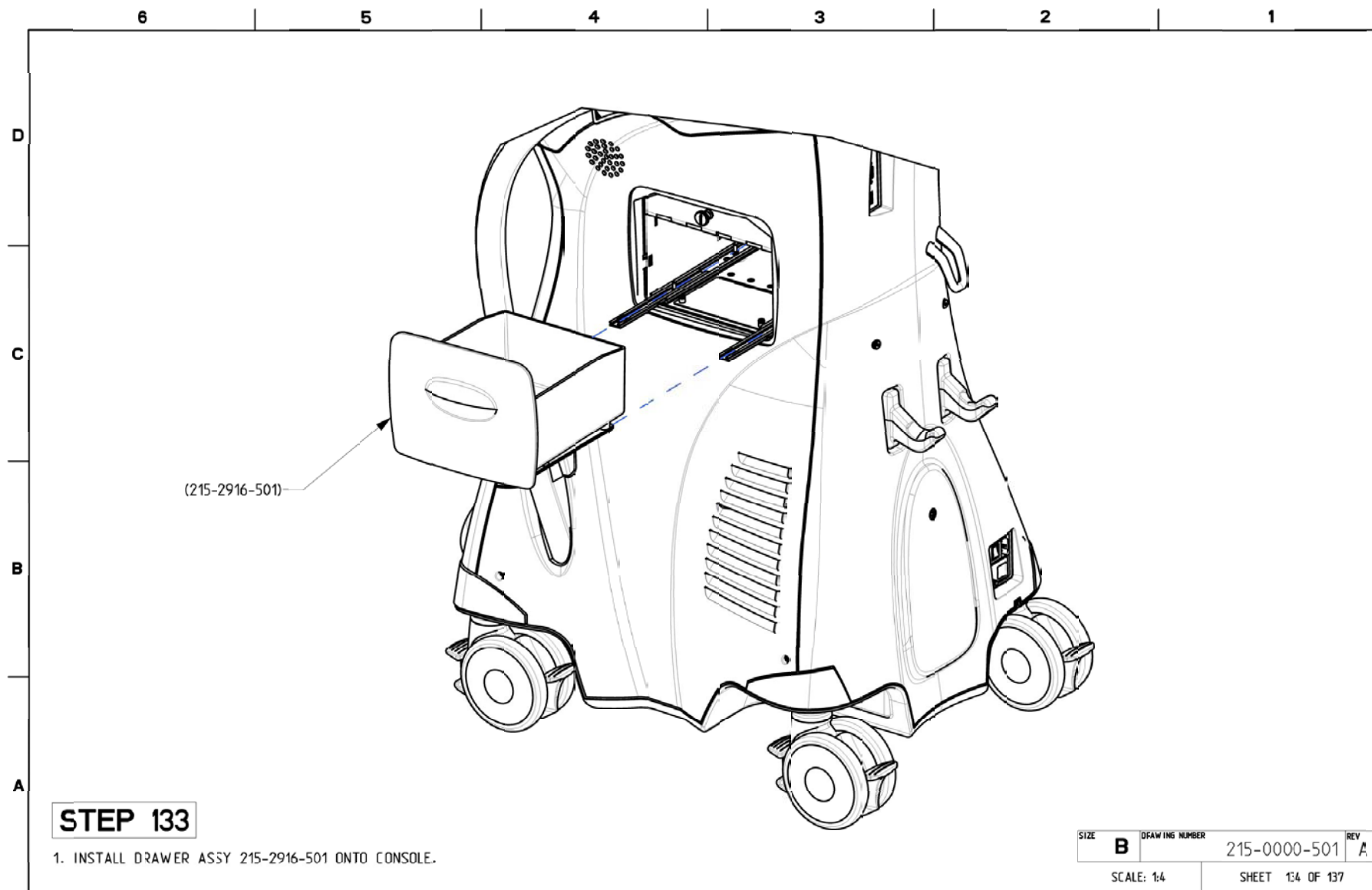
SIZE	DRAWING NUMBER	REV
B	215-0000-501	A
SCALE: 1:4		SHEET 129 OF 137

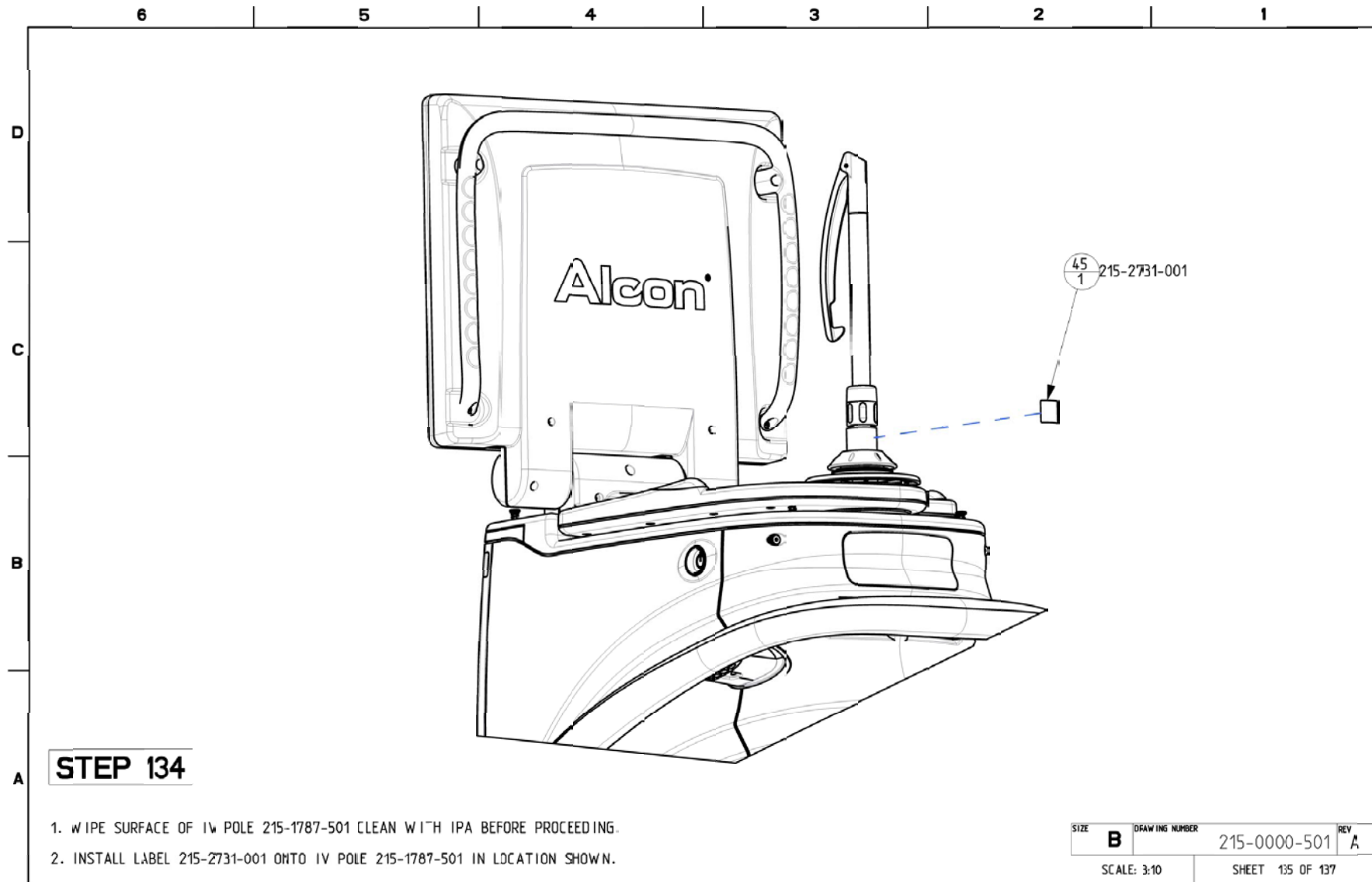


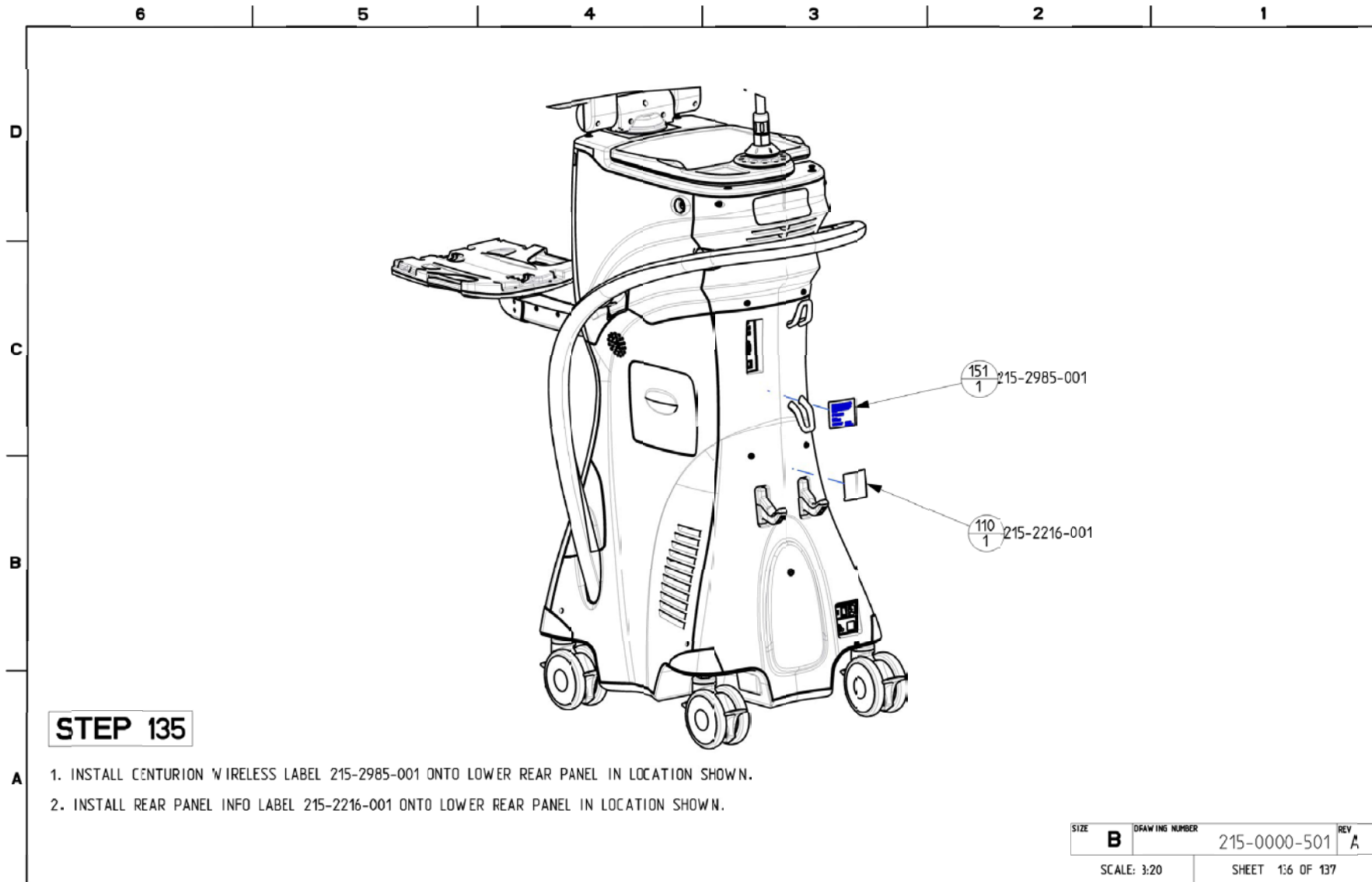


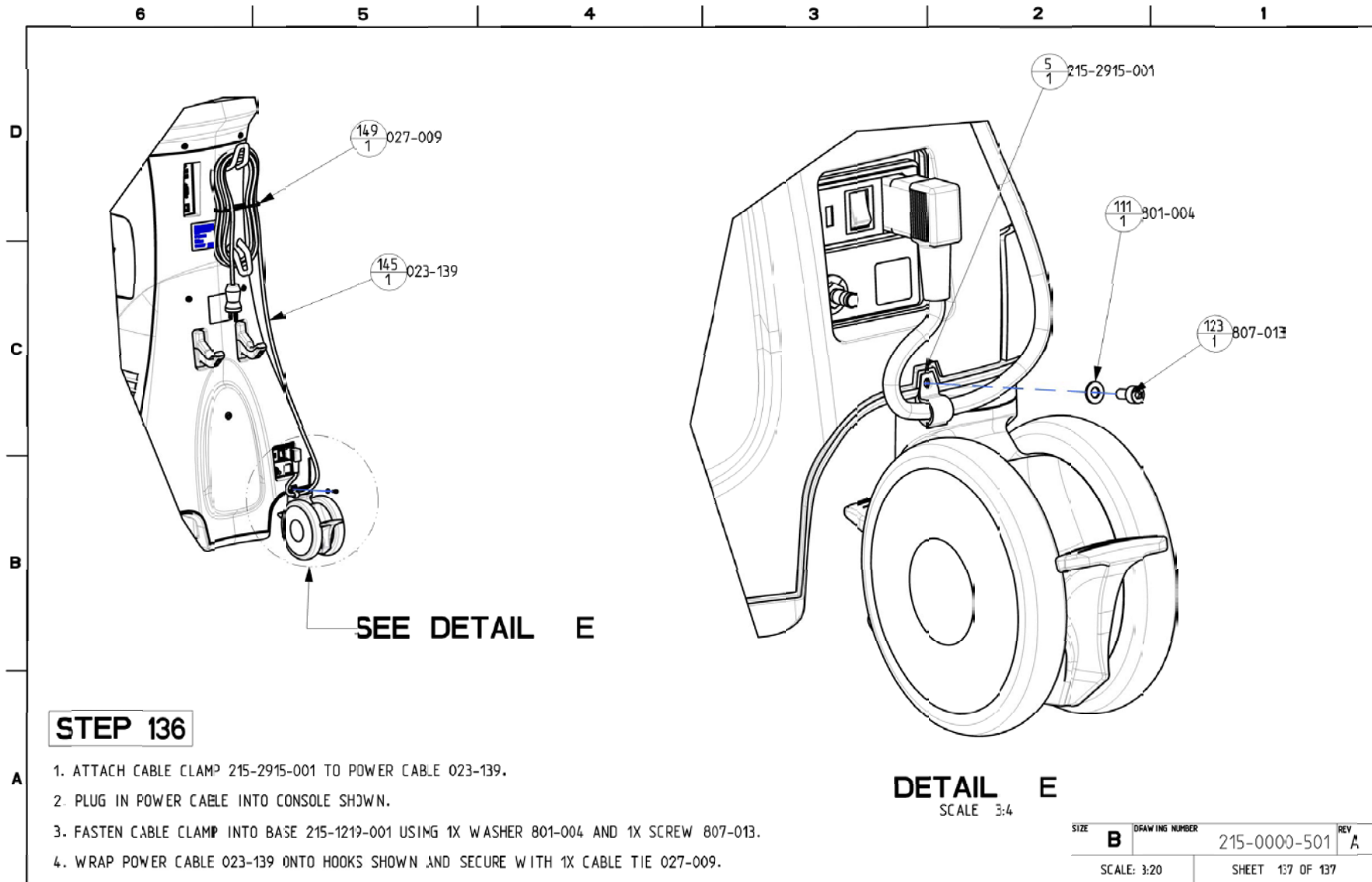












SECTION SEVEN - ADDITIONAL INFORMATION

This section is reserved for additional service information that may be required for the system or related accessories.

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